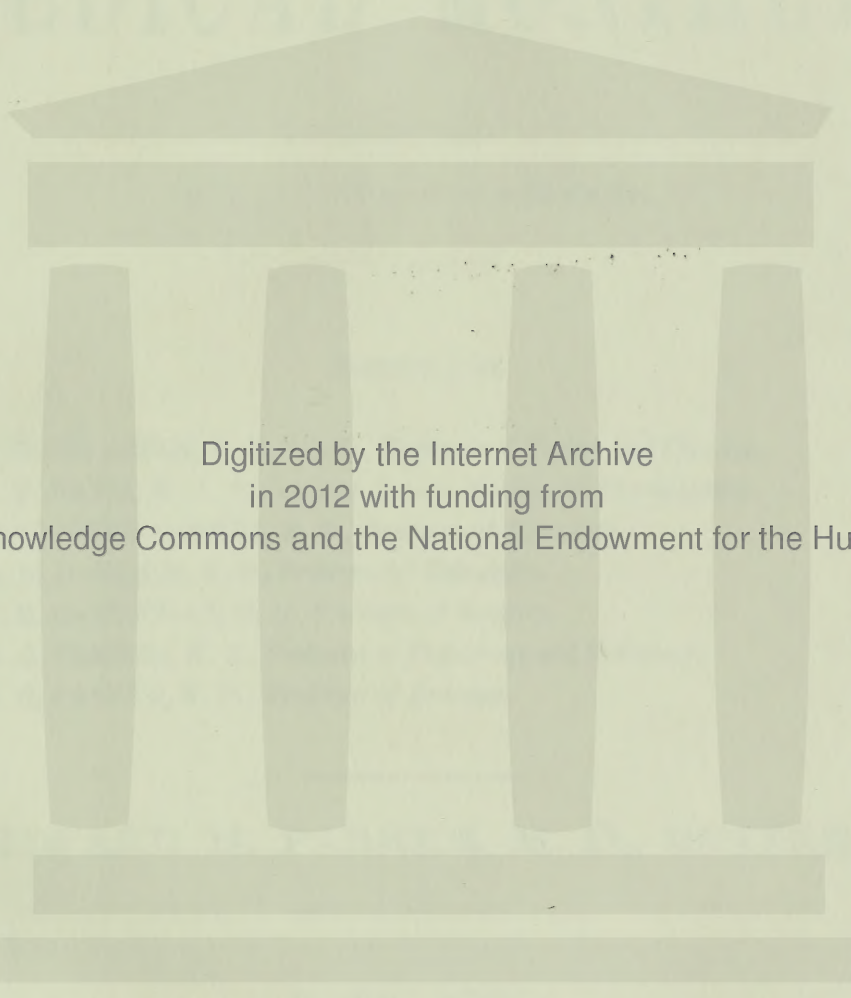


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THE
AMERICAN
MEDICAL MONTHLY.

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INDEX TO VOL. IV.

OF THE

AMERICAN MEDICAL MONTHLY.

Abdomen, punctured wound of.....	179
Abernethy's true character not generally understood.....	123
Abscess of the Liver.....	211
Academy of Medicine.....	247
Accoutrements.....	105
A Doctor's Life.....	410
A Glorious Chance.....	413
Ambulances.....	106
American Pharmaceutical Association.....	336
American Practitioners—Selections from Favorite Prescriptions of Living.....	31, 368
American Surgeon in the Russian Service—Death of.....	96
Amniotic Dropsy—Fatal Case of.....	182
Anatomy—Notice of Richardson's.....	195
Anecdote.....	416
Annual Session of the Ohio State Medical Society.....	116
Another Mode of Passing Catheters into the Trachea.....	184
Antimoniate of Quinia in Intermittents.....	415
Anonymous Letters.....	515
Application of Gypsum Bandages.....	457
Appointment.....	415
Are our Public Schools Injuring the Bodies of our Children...	411
Arms.....	107
Artificial Nipples—Effect of.....	96
Asphyxia—Effects of Cauterization of the Chest in.....	401
Association of Superintendents of Asylums for the Insane.....	196
Bandages—Gypsum or Stucco.....	453
Bandages—Application of.....	457
Bandages (Gypsum or Stucco) in Complicated Fractures.....	471

Barker's (B. F.) Case of Amniotic Dropsy.....	182
Barker's (B. F.) Case of Superfoetation.....	364
Barton (E. H.) Review of, on Yellow Fever.....	376
Bell (Luther V.) on "Spiritual Phenomena".....	196
Bell on Spiritualism—Editorial.....	253
Bellevue Hospital—Surgical Cases at.....	177
Berlin—Medical Matters in.....	310
Bile of the Terrapin, Wetherell on.....	36
Bladder—Extraction of a Uterine Pessary from.....	246
Boston Veterinary Institute.....	244
Bowditch, Henry I., On Anomalous Development of Tubules.....	1
Bozeman's (U.) Case of Vesico-Vaginal Fistula.....	241
Breast, Hypertrophy of.....	391
Brodie, (Sir Benjamin C.) Sketch of.....	356
Bronson's (J. O.) Case of Early Menstruation.....	180
Buffum's (A. C.) Obstetrical Extractor.....	373
Calculus—Intestinal.....	392
Calculus removed by Supra Pubic Operation.....	233
Calling in a second Medical Man.....	399
Case of Amniotic Dropsy terminating Fatally.....	182
Case of Early Menstruation.....	180
Cases of Anomalous Development of Tubercles, with Physical Signs of Pneumonia, by Henry I. Bowditch, M. D.....	1
Case of Superfoetation.....	364
Cause and Prevention of Yellow Fever—Review of Barton on.....	376
Cauterization of the Chest in Asphyxia.....	401
Cavendish (Henry) and the Discovery of the Chemical Consti- tution of Water.....	417
Chandler (J. L.) on Medical Education.....	318
Charge.....	336
Chemistry of Common Life—Review of Johnston's.....	127
Children—Are our Public Schools injuring the Bodies of.....	411
Claiborne (J. H.) On Drunkards' Colic.....	227
Clinical Lectures on Diseases of Women and Children.....	134
Colica Bacchanalium (<i>Colic of Drunkards</i>).....	227
Committee of the New York Academy of Medicine, and their Reports (Editorial).....	90
Conduct of the War in the Crimea.....	95
Conservative Treatment of Fractures.....	449
Continued Lactation of Children by Sick Mothers.....	95
Coronoid Process of the Ulna—Fracture of the.....	239

Correction.....	336
Correction.....	256
Cough—Turnbull on Whooping	293
Crimea—Conduct of the War in the.....	95
Dangers of Ignorance.....	330
Davidson's (A. A.) Old Darkey.....	238
Death of an American Surgeon in the Russian Service.....	96
"Delta," the Poet Physician	119
Discovery of the Chemical Constitution of Water.....	417
Discussion of Dr. Horace Green's Paper.....	149
Diseases—Feigned.....	99
Dislocation of the Elbow—Prosecution after.....	277
Dr. Austin Flint	256
Dr. C. T. Collins	176
Drake's (Daniel) Memoirs—Review of	479
Draper (Dr. Isaac, Jr.) Death of.....	96
Dropsy—Amniotic—Fatal	182
Drunkard's Colic	227
Education—Medical	318
Effects of Cauterization of the Chest in Asphyxia.....	401
Elbow—Prosecution for Malpractice after Dislocation of.....	277
Epidemic at Norfolk.....	335
Epidemics and Quarantine	337
Epilepsy, Trephining in some Forms of	121
Errors of Teetotalism	246
European Practitioners—Sketches of, No. I., No. II.....	356, 439
Eve's (P. F.) Case of High Operation for Lithotomy.....	233
Experiments on Hydrophobia.....	147
Extraction of a Uterine Pessary from the Bladder.....	246
Feigned Diseases.....	99
Femoris—Fracture of the Cervix.....	390
Fergusson (William) Sketch of	439
Fistula in Ano—Treatment of	314
Fistula—The Operation for Vesico-Vaginal	136
Fistula—Vesico-Vaginal	241
Fouere on the Effects of Cauterization of the Chest in Asphyxia.....	401
Fracture of the Cervix Femoris.....	390
Fractures—Conservative Treatment of.....	449
Fracture of the Coronoid Process of the Ulna.....	239
Fracture of the Skull—Trephining in certain Cases of.....	121
Gibbs (O. C.) On Trephining in Fracture of the Skull and in Epilepsy	121

Glück's (I.) Mode of Passing Catheters into the Trachea	184
Glück's (Isidor) Practical Lectures on Military Surgery	97, 449
Green's (Horace) Introductory Lecture	337
Green's (Horace) Selections from Favorite Prescriptions	31, 368
Griscom on Hydrophobia	147
Gun-shot Wound of the Head	307
Gypsum Bandages	453
Gypsum Bandages, Application of	457
Gypsum Bandage in Complicated Fractures	471
Hall (Marshall) on the Physiology of Paralysis	516
Hayward's (George) Surgical Reports and Miscellaneous Pa- pers—Notice of	135
Head—Gunshot Wound of the	307
Health of New York	253
Hospital—St. Luke's	252
Hospital—Surgical Cases at Bellevue	177
Hydrophobia	147
Hypertrophy of the Breast	391
Ignorance—Dangers of	330
Injections—The Academy on Pulmonary	173
Injury of the Shoulder	209
Insanity—Case of Luigi Buranelli	217
Insanity Treated by Quinine	415
Intermittents—Antimoniate of Quinia in	416
Intestinal Calculus	392
Items	95, 415
Kitchen, Portable	105
Lactation (Continued) by Sick Mothers	95
Lake Superior Region Favorable to Health and Longevity	392
Lecture, Introductory to the Course of Lectures in the New York Medical College	337
Lecture—Introductory to the Courses on Physiology and Pa- thology	257
Lecture on Henry Cavendish and his Discoveries	417
Life, a Doctor's	410
Lithotomy—Successful Case of High Operation	233
Longevity	238
Longevity, Cases of in New Hampshire	96
Longevity, Lake Superior Region Favorable to	392
Mackenzie on the Eye—Notice of	490
Malpractice—Prosecutions for	495

Medical Appointment	175
Medical Education	318
Medical Matters in Berlin.....	310
Memoirs of Daniel Drake, M. D., Review of.....	479
Menstruation—Case of Early.....	180
Military Surgery	255
Military Surgery, Practical Lectures on.....	97, 449
Millers (H. V. M.) Case of Gunshot Wound of the Head.....	307
Minutes of the Committee of the New York Academy of Medi- cine on Dr. Green's Paper.....	38
Mitchell (T. R.) On the Treatment of Fistula in Ano.....	314
Moore's (Adams) Prosecution for Malpractice.....	277
Mortality of the City of New York, Notice of the Table of Semi-Centennial	133
Necrosis, Removal of a Portion of Radius for	177
New Hampshire, Cases of Longevity in.....	96
New Medical Journals.....	414
New York Academy of Medicine.....	38, 74, 149
New York Academy of Medicine.....	236
New York, Health of	253
New York Medical Times.....	414
New York Pathological Society.....	144
New York Pathological Society	390
New York State Medical Society	209
New York, Table of Semi-Centennial Mortality of	133
Nipples, Artificial, Effect of	96
Norfolk, Epidemic at.....	325
Norton (W. S.) on Injury of the Shoulder	209
Note on the Bile of the Terrapin.....	36
Notice of Mackenzie on the Eye	490
Notice of Richardson's Anatomy	195
Notice of the Transaction of the American Medical Association	492
Obstetrical Extractor	373
Ohio State Medical Society, Annual Session of.....	116
Old Darkey	238
Ophthalmic School.....	336
Paralysis, Physiology of Different Varieties of	316
Paraplegia	211
Parker's (E. H.) Introductory Lecture.....	257
Pessary, Extraction of a Uterine, from the Bladder.....	246
Pharmaceutical Association.....	336

Physiological Errors of Teetotalism.....	246
Physiology of Different Varieties of Paralysis.....	316
Pneumonia, Physical Signs of, in Cases of Anomalous Develop- ment of Tubercles.....	1
Polypi, Uterine	288
Portable Kitchen.....	105
Practical Lecture on Military Surgery.....	97, 449
Practitioners, European	356, 439
Prescriptions, Selections from Favorite.....	31, 368
Prosecution for Malpractice	277
Prosecutions for Malpractice.....	495
Pugh's (J. M.) Case of Fracture of the Coronoid Process of the Ulna	239
Pulmonary Injections, the Academy on	173
Punctuation	96
Punctured Wound of the Abdomen.....	179
Quarantine and Epidemics	337
Quarantine for Yellow Fever	255
Quinia, Antimoniate of, in Intermittents.....	416
Quinine, Insanity Treated by	415
Recruiting	99
Radius, Removal of a Portion of.....	177
Report of Dr. A. H. Stevens on Catheterization of the Tra- chea	76
Report of the Majority of the Academy's Committee on Dr. Green's Paper	51
Report of the Minority of the Academy's Committee on Cath- eterization of the Trachea.....	77
Review of Barton on Yellow Fever.....	376
Review of Drake's Memoirs	479
Review of Drake's Systematic Treatise	387
Review of Johnston's Chemistry of Common Life	127
Review of Paget's Lectures on Surgical Pathology.....	186
Roser, Tenner, and Boeck on Vesico-Vaginal Fistula	136
Russian Service, Death of an American Surgeon in the	96
Sayre's (L. E.) Surgical Cases at Bellevue Hospital.....	177
Schools, Effect of, on Children.....	411
Second Edition.....	492
Selections from Favorite Prescriptions of Living American Practitioners	31, 368
Shoulder, Injury of	209

Sir Benjamin Brodie	356
Sketch of Fergusson	439
Sketch of Sir Benjamin C. Brodie	356
Society, Ohio State Medical.....	116
Softening of the Spinal Cord	211
Spiritualism, Bell on—Editorial	253
“Spiritual Phenomena,” Bell on.....	196
Steiner’s (L. H.) Lecture on Cavendish and the Discovery of Water.....	417
Steven’s (Dr. A. H.) on Catheterization of the Trachea.....	76
Stimulants and Tonics	31, 358
St. Luke’s Hospital	252
Stucco Bandages	453
Stucco Bandages, Application of	457
Stucco Bandages in Complicated Fractures.....	471
Superfoetation, Case of	364
Surgical Pathology, Review of Paget’s Lectures on.....	186
Surgery, Practical Lectures on Military	97, 449
Surgical Cases at Bellevue Hospital	177
Surgical Reports and Miscellaneous Papers on Medical Subjects	135
Table of the Semi-Centennial mortality of the City of New York, from 1804 to 1853, Notice of.....	133
Teetotalism, Physiological Errors of.....	246
Terrapin, Wetherill on the Bile of the	36
The Academy on Pulmonary Injections	173
The Committee of the New York Academy of Medicine and their Reports, (Editorial).....	90
The Operation for Vesico-Vaginal Fistula.....	136
To All Whom it May Concern.....	413
Tonics and Stimulants.....	31, 368
Trachea, Another Mode of Passing Catheters into.....	184
Transactions of the American Medical Association, Notice of..	492
Trephining in Certain Cases of Fracture of the Skull, and in some Forms of Epilepsy	121
Trial of Luigi Buranelli, Plea of Insanity.....	217
Tubercles, Cases of Anamolous Development of	1
Turnbull (Lawrence) on Whooping Cough	293
Typhoid Fever at the South	254
Ulna, Fracture of the Coronoid Process of	239
Uterine Polypi.....	288
Uterus Bicorniporeus	364

Vesico-Vaginal Fistula, Case of	241
Vesico-Vaginal Fistula, the Operation for	136
Veterinary Institute	244
War in the Crimea, Conduct of the	95
Water, Cavendish's Discovery of the Chemical Constitution of .	417
Wetherill (Charles M.) on the Bile of the Terrapin	36
Where is the American Miss Nightingale	492
Whooping Cough	293
Wound of the Head by Gunshot	307
Wound (punctured) of the Abdomen	179
Yellow Fever, Quarantine for	255

THE AMERICAN MEDICAL MONTHLY.

JULY, 1855.

PART I.—ESSAYS, MONOGRAPHS, AND CASES.

Cases of Anomalous Development of Tubercles, commencing at the base of the Lung and gradually extending upwards; with the Physical Signs of Pneumonia. Analysis of the Cases: Diagnosis, Prognosis, Pathology, &c. By HENRY I. BOWDITCH, M.D. Read before the Boston Society for Medical Observation, February 20th, 1855.

CASE I.—I. H., a stout young apothecary, aged 22. I saw him Jan. 2, 1842. He had had a cough for three weeks, dry at first, but for ten preceding days it had been looser, with frothy sputa. It had, however, never been very troublesome. He had been occasionally liable to "slight colds," during the preceding years, and transient pains in the chest, but he had not thought himself ill. The day before my visit he had been seized with an acute pain in the region of the heart, preceded by chilly feelings several days before, and for which he had kept the house during the greater part of the time. No distinct febrile paroxysm. No diminution of strength or flesh. He in fact considered himself as only slightly ailing, and I was summoned solely on account of the pain in the side. His digestion had been good. At my visit, he was sitting up, and looked not very ill; he had no marked dyspnoea, or any manifest sign of serious internal lesion. Pulse 96 to 100. A dull pain only

was felt on a full breath, in the left breast, *near the cardiac region* ; and upon auscultation there I found a *fine crepitus râle* over a space about the size of the palm of the hand. I regarded the case as one of mild and very local pneumonia. I prescribed two leeches, to be followed by a poultice. Dover's powder and jalap.

Jan. 9th : Had improved. The crepitation had lessened somewhat. It had, however, persisted from the first moment that it was noticed, but there had *never been any hepatization*, as in pneumonia. Little or no fever ; cough less ; sputa easy, greenish. At times, slight transitory pains in the right chest ; bowels costive.

Feb. 17th : Had been gradually getting more ill, although he had been able to walk out. On percussion in front there was a decided difference of note in favor of the right breast ; fine crepitation at left ; voice resonant at both apices ; patient felt faint and weak. A pill of acet. morph., ipecac. and aloes was ordered ; p. r. n. Patient went to the country.

March 10 : Returned no better, but with all the signs of evident phthisis. Bruit de pot félé where crepitation had been heard. Dull percussion of left breast ; cavernous respiration and pectoriloquy at the top of the right lung.

He continued gradually sinking, and died the last of May or first part of June.

It will be remarked that this patient, after having had occasionally simple "colds," was suddenly taken with pain in the left breast, and although there were none of the characteristic marks of pneumonia, prostration, rusty sputa, &c., the physical sign, *crepitation of a minute character, and heard towards the lower parts of the lung, lasted certainly from Jan. 2d until Feb. 17th*, and probably some days longer, and finally terminated in softening of the lung and an excavation.

CASE II. Sept. 5th, 1843 : A. B., dry goods seller, aged 22. Had experienced some dyspeptic symptoms for six months, and for two months had had slight cough, but no pains in the chest and no fever. He had in fact felt well enough to be engaged in his business on the afternoon of the 5th. An hour before I

saw him he had had hæmoptysis, of several sputa. No other serious symptoms.

The chest resounded well, and the respiratory murmur was everywhere heard; nowhere tubular, but at the tops of both lungs, particularly at the left, there seemed as if a mucous râle were about to be produced. Voice, slightly resonant just below the top of the left shoulder.

Pill of gr. ss. opium and 2 gr. acet. plumb. ordered.

On the following day he seemed quite well, and started for ———, on a visit to his father's house, in order to rest.

Oct. 2d, I saw him again. While at his father's he had had copious hæmoptysis, but after that regained his strength, and seemed to be improving in every respect, when, on the 27th of September, he was seized with chills and soreness of the chest, and afterward became more ill. At my visit he looked thin, his skin was cool, pulse 72, slight sweats at night, appetite lessened. Occasional cough; lying on the left side increased it; no severe paroxysms, but he hawked often; he felt very weak.

Physical signs: Rude respiration under left clavicle; a little tubular on the top of shoulder. But the most marked sign was a bronchial respiration, bronchophony, crepitous râle, and dulness on percussion throughout the *lower third of the back*; right top perfectly normal.

R. Mist. ferri comp. f. 3ss. t. i. d.

Oct. 4th:—Cough more urgent; auscultation of back as before.

Two leeches to side, and repeat, if need be, day after to-morrow.

R. Morph. acet.,
Pulv. rhei.,

gr. iv.
3ss.

F. pil. xx. One night and morning.

Oct. 22: There was a slight crumpling at the apex, but the most marked sign was the fine crepitus, as before, on coughing, but no distinct bronchial respiration or bronchophony. He reported that subsequent to the last examination he became worse, and had had pains about the chest, and grew thin, but

that since he had been improving. At the time of my examination, he had scarcely any more than a simple hemming ; no severe cough ; less dyspnœa, though it was still decidedly manifest on going up stairs ; digestion perfect ; no hectic.

He was preparing to go South. This he did, and June 26, 1844, I again saw him.

He had spent six months in the pine regions of Georgia, hunting and fishing, and had at times ridden forty miles daily. During the whole period of six months he had had no trouble, save occasionally a little cough. During his passage home he began to emaciate, and felt ill. In April, a tendency to diarrhœa commenced, with oppression after food, with some slight febrile paroxysms. No dyspnœa except when lying on the left side ; slight hæmoptysis after his return North, as he thought, from the fauces, which were sore, and looked varicose. He had gained flesh while at the South, which he had lost after his return.

Physical signs : Percussion everywhere good ; clavicles prominent ; crackling in the left breast, and back, even to the base.

I put him upon a careful semi-tonic diet, with a glass of port wine daily. Sponge bath daily.

Aug. 8th : I again met him. He had improved very much in his health, and his whole aspect was much better. He was preparing to spend another Winter in the South. *Still some fine crepitous in the lower part of the back* on coughing. He had employed Dr. Ramadge's inhaling tube with great relief ; he could breathe easier after using it.

Having spent the Winter in Alabama, and thinking himself almost or quite well, he returned North in the Spring of 1845. I saw him July 30. He had attended to his business, but had always had a slight cough. In December a fistula in ano occurred. He looked paler and thinner than I had ever seen him. The physical signs had become manifest in the apex of the right lung ; the whole of the left was involved, and a fine crepitus mixed at times with coarser râles, was heard in the lower two-thirds of that lung.

He died not long afterward.

This case is analogous to the preceding one. A young man,

aged 22, was seized, after having been but slightly unwell, with severe symptoms, and the *most marked physical sign*, at the second examination (and probably the same would have been found at first had a more thorough exploration been made), *was a fine crepitation heard in the lower part of the left lung*, whence the disease extended upward and to the upper part of the left lung. The physical signs, at first, were those of pure pneumonia. Yet the crepitus lasted more or less manifestly from Oct. 2, 1843, to July, 1845!

CASE III.—The Rev. Mr. D., a clergyman residing in New Hampshire, aged 24,—very earnest and devoted to study. He entered my room, looking quite well, Dec. 14, 1849. His health had been good, except some aphonia during the previous Spring, which was wholly removed by the amputation of his uvula, after which he was well till three weeks before I saw him. Then he had a slight cough, preceded some weeks before with trivial, pricking, pains in the thorax, always coming on after sitting for some time, and relieved by walking. Slight sweating at night after the cough commenced. No expectoration till the day before I saw him, and then he had had a little hæmoptysis, which he thought came from the right lung. Some loss of flesh, but not of strength. His appearance on examination was that of a rather slender person, but bright and active as if not suffering from any severe disease. No apparent dyspnoea. Pulse somewhat quickened. In front, I heard indistinct bronchial respiration, and bronchophony about the third rib of the right breast, and behind the same signs were very distinct from the spine to the angle of the scapula; while *below the angle there was the most minute crepitus*, on full breath.

Though the physical signs were evidently those of pneumonia, the whole of the rational signs, their slowness,—above all, the perfectly healthy and easy appearance of the patient,—prevented me from regarding the case as one of common, acute, pneumonia. I remembered the two cases already named, and feared an acute, latent, and anomalous deposit of tubercle.

Dr. James Jackson saw the patient in consultation, and fully agreed with me. Nevertheless the physical signs were so like

pneumonia that it was determined to use an antiphlogistic course :

R.	Hyd. sub. mur.	gr. l.
	Opii.	gr. $\frac{1}{4}$.
	Ant. Tart.	gr. $\frac{1}{8}$.

were prescribed every night. Vegetable diet.

Dec. 19th : Reported more pain in the right side,—more sputa, yellow and adhesive. Felt very weak. Respiration 28. Pulse 112.

The sub-muriate was carried to the point of producing a slight sore mouth, and all the usual treatment of pneumonia pursued without the least benefit or change except for the worse. Finally, cod liver oil was directed, about Jan. 14. Extract of lactuca ordered instead of opiates.

Jan. 21st : The report was as follows : Very great tubular respiration, between the spine and angle of the scapula ; râles as before, below the angle. Dyspnœa still marked, on exertion ; and pulse very quick. Otherwise he felt better, and seemed rather less emaciated. Digestion, good. Sleep, good. Cough, a little in the morning ; expectoration, of a greenish hue, and very small in quantity.

Feb. 5th : Symptoms as above, except that there was more cough, but it was dry.

About this period he had a feeling of obstruction in the left ear, and it became so troublesome that I invited Dr. Clarke to see him (March 6th), who, upon a thorough examination, found no evident trouble. Glycerine was ordered, but without avail. He became weaker, daily. His cough was still slight ; he had no pains in his chest ; his chief trouble was a slight salivation, which he attributed to the calomel ; he was more costive. No hectic.

Feb. 27th : Kept awake by slight pain in left side, at times. Generally, as before, except more emaciated, and vomited usually after food ; some œdema of the legs.

R.	Morph. acet.	gr. iii.
	Aloes,	ʒss.
		in pil. xx. 1 at night.

April 16th : *Extremely* thin : ulceration of the right cornea ; cough more severe ; œdema greater.

R. Collyrium of sulph. zinc, gr. vi. ad. aq. f.ʒij.

April 20th : He died, after very little suffering, and slight cough.

During the latter part of life he felt as if the right side of the chest had died ; his mind was perfect until the last moment ; his expectoration was slight till the last few weeks of life, and rather by hawking than coughing ; no hæmoptysis. Digestive organs, well. The ulcer of the cornea nearly deprived him of sight.

Autopsy on the 21st. Great emaciation. Right lung firmly united throughout its whole extent to the pleura costalis. Upper lobe wholly riddled by a large ragged excavation containing pus and tuberculous matter. The lower lobe had a dense feel, and on cutting it open, it presented a perfectly solid structure, containing common tuberculous matter and something that resembled chronic pneumonia. These two conditions were found in every part of the lobe ; not a particle of air could be perceived. At times this gray dense substance surrounded the tubercles. Some small cavities containing pus were seen, but they did not communicate with the bronchi.

The other lung collapsed freely on raising the sternum ; a few adhesions only at upper part. Generally, this lung had the healthy pink hue. At the apex were one or two gray tubercular masses. The lower lobe was diseased in a slight degree, as the lower lobe of the other lung, *i. e.*, a few tubercles with a dense structure around ; no cavities containing pus.

Head—Internal ears, healthy. The abdominal organs looked healthy.

Resumé of the case. A young man was taken suddenly with slight hæmoptysis, after having been only slightly unwell. None of the rational signs of acute pneumonia, and yet the physical signs exactly corresponded with the first and second stages of that disease. Though active antiphlogistic treatment was first adopted, and subsequently the usual treatment for phthisis was followed, neither plan had any influence toward checking the onward career of the complaint. In fact, it may well be doubted whether the antiphlogistic course was not actually deleterious. Certainly I should never recommend the same again in a

like case. The physical sign of *crepitation at the lower portions of the lung* lasted over three months and a half.

CASE IV.—Mr. H——, aged about 30. Not wholly well for two months, but very actively engaged as a merchant in a large jobbing house of this city. I saw him in consultation, March 25, 1854. I learned that, on a visit to New York on business, he was exposed to very severely cold weather, particularly in an open sleigh on his return. He had been chilly every night on retiring to rest. On his return to Boston, he felt as if he had taken a bad cold; he had lost his appetite, and his strength was less, although he was quite able, and determined to be at work. In a few days, however, his cough was so urgent, and his symptoms became so manifest, that by directions of the attending physician he kept at home. At my visit, I found him in bed. He had however been up, daily. His pulse was rapid; his cough, violent; his expectoration, thin, glairy, small in quantity,—never bloody; he was very nervous, and evidently much excited about himself. The physical signs were *a fine explosion of crepitus râle in the lower third of the right back*, and the respiration was less clear throughout the whole back, even at the top, *though evidently the chief obstruction was at the base*. A faint rubbing was heard on full breath. The attendant physician informed me that when the patient first called at his office, after his return from New York, he seemed like one who had been running violently, he panted so much. The physical signs were some dulness in the part above named, and sibilant and sonorous and loud mucous râles. His physician regarded the case as bronchitis, in consequence of exposure, which had gone on toward hepatization. The patient wished to go out, but he was required to keep his house. He had used calomel internally, and croton oil externally. The dulness had steadily but slowly augmented, and at my visit was more than at any time before. I suggested the probability of acute phthisis, advised blistering, the omission of calomel, &c., and of depressing treatment, and the use of the cod liver oil. I requested that Dr. Jackson should be consulted. That gentleman saw the patient a few days afterward, and was, I believe, inclined to view the case in the same light as I did. He however request-

ed another examination. Mr. H—— became very anxious about his health, and declined allowing any further auscultation.

He spent the Summer in the country ; grew fat on cod liver oil, but his cough did not cease, the dyspnœa rather augmented, and in the Autumn he had a fistula in ano. The attending physician informed me that there were signs of a cavity in the lower lobe. In other words, it seemed from the long continuance of the disease (eight months), and from similarity to the two others already given, that it was another example of peculiar, anomalous, tubercular disease, commencing in crepitous râle at the base of the lung. This patient is still alive, and has undergone two very serious changes since that period. His fistula still remains open. He is considered a permanent invalid, and has done no business since his first attack. Last Winter he was suddenly seized with signs of pneumothorax of the affected side, with tympanites, resonance on percussion, absence of murmur. From the immediate effects of this attack he slowly recovered, and, instead of air, a large quantity of serous yellow fluid was effused ; six pints of which I removed, with great relief to the patient, in May, 1855. I used the same apparatus mentioned by me in my paper, given in the *American Journal of Medical Sciences* for April, 1852, and in a former number of the MONTHLY. Nothing but the most pleasant results followed the operation. Now (June 6, 1855) he walks about, does not attend to business, but occasionally visits his warehouse. The fluid has shown no tendency to return, but he has great dulness of right breast, and a distinct dry tubular respiration and bronchophony ; also some vocal resonance at the top of the left back. No crepitation, but only an obscurity of respiration at the lower parts, where crepitation was heard last year.

Resumé. A most interesting and important case ! Taken a little more than a year since, with the crepitation as in previously described cases. This patient has gone through three of the most serious accompaniments of phthisis, viz : fistula in ano, pneumo-thorax, and pleurisy, with effusion ; for the latter of which a puncture was made, with complete relief to the symptoms depending on that state of things ; and now, *finally*, he

presents the usual signs of condensation at the apices of both lungs. He is however better than for some time, but has evident dyspnoea and emaciation. He falls into the same category with case VII.

CASE V.—Aged 20. A collegian the last two years, and a scholar in Boston before. Residence at W———. Always puny, but never really ill; easily fatigued by exercise, but able to walk six or eight miles daily. Has usually walked much. Never liable to cough; digestion, good. I saw him July 21, 1854.

For weeks before visiting me, he had had some pain in the right chest, but had been relieved. He had been very much occupied in preparing for a collegiate exhibition, in which he had felt a deep interest. For a few days he had felt weak, owing, as he thought, to the prevalence of an East wind, and the day before I saw him he had a tickling sensation at the bottom of the sternum, and gradually a soreness came on, low down in front of the chest. Otherwise he felt in perfect health. On the day this soreness commenced he spent a long time in the woods repeating, in a loud voice, the exercise he had prepared for exhibition. He used port wine as a gargle, and gradually the soreness, or burning pain, fastened upon the epigastrium. It increased as the evening advanced, but he awoke free from all trouble the next morning. By resuming his daily labors it was reproduced. Digestion usually in tolerable order, but a little costive. Dejections every second or third day. Never any acidity. No chills, heats, or sweats. Urine darker than usual, and it had a strong odor and a sediment.

As he entered my room, he looked rather frail, but well. Tongue clean; appetite good. His respiration was easy; soreness prevented at times a full inspiration; he had also, occasionally, a dull pain in the back. He felt somewhat restless, without any evident cause. Pulse 72; skin normal. The rational signs were in fact so small that I should not have thought it necessary to examine the thorax of the patient, had he not visited me solely for that purpose. The physical signs were as follows:

Inspection good. On percussion, difference of pitch on lower third, front and back, it being a little *higher* at the left than at

the right. By auscultation was heard *a very minute crepitation throughout the lower third of the left*, corresponding exactly to the higher note.

From the physical signs it was plain that there was a congestion of the left lung. The rational signs set aside wholly the idea of pneumonia. I could not but be reminded of the preceding cases of phthisis. I deferred my judgment, however, but ordered as follows :

He must keep quiet, give up all elocutionary efforts, have a simple diet.

R. Pill Hydrarg, ℞i.
 in pil. iv. One every other night.

July 24th: On the day of this visit he was seized, while driving, with a severe pain in the left side. The motion caused him great agony. From that period he had had uncomfortable feelings at the top of the shoulder ; but otherwise the symptoms were as before. Physical signs identically the same as three days previously.

Croton oil to the chest. Keep quiet.

July 29th: While driving to my office he was again seized with a pain in the side, so that he had to rise in the carriage in order to avoid the jolting. He was very costive, in spite of Rochelle powders and injections. Exertion produced heat in the side and along the sternum. On the night of the 28th he had a little hemming, but no cough and no sputa. Breathing a little more difficult. Pains in both sides, at times, on full breath, and unpleasant feelings there all the time. No hectic. Appetite indifferent till he commenced eating, then it became voracious. Aspect as good as at his first visit. A slight hem occasionally noticed during examination.

Crepitation perhaps a little coarser behind, but heard from *one inch above the angle of the scapula, and in front from an inch below the nipple, to the base of the lung.*

Extract Colocynth comp., gr. v., every morning.

Advised the attending physician to use iodide potass. and leeches.

Aug. 23d: Had been worse. Ten days before, was visited

by a college friend ; talked much and read aloud. He had increased heat about the chest, and was confined for two or three days. He had had four leeches, and had followed the prescription above given. Very little pain in the chest. Digestion better ; bowels regular ; face a little red ; urine natural. "*Not a particle of cough ;*" able to ride better ; no trouble in coming into town ; pulse 84 ; head well ; no emaciation. *Crepitation terminated distinctly and abruptly in the middle of the back and at the nipple in front ;* that is, it had extended.

Continue the same course, increasing the dose of the iodide.

A month subsequently, I learned that the physical signs were gradually augmenting, but the patient suffered much less pain, and had thrown aside all medicine and came into town to take lessons on the pianoforte. In a letter received the past week (June 17, 1855), the attending physician informs me that the disease of the lung is increasing.

CASE VI.—I saw in consultation with Dr. C——, October, 1854. Dr. C. gave me the following account of the case :

G. A. H., aged 26, hardware dealer, salesman and traveller in a large firm. Married.

In February, 1854, he had an attack of "lung fever and pleurisy," from which, after a few weeks, he recovered so far as to be able to return to his business. His health however was far from perfect, but being active and "ambitious," he continued to perform full service through the remainder of March and April. About the middle of May, he was seized with a febrile attack, accompanied with a slight irritating cough and shortness of breath. He was confined to his bed only a day or two. The physical signs were chiefly the following : Great dulness on percussion over the lower half of the *right* lung, with bronchial respiration and bronchophony in the same part ; some crepitation or mucous râle immediately above the dull spot, and at the very lowest portion of the *left* lung. The crepitation in both lungs gradually disappeared ; the cough almost entirely left him, and the dyspnœa occurred only after exercise. His pulse fell to 80 ; his appetite was sufficient, and

his bowels were tolerably regular. No appreciable improvement took place in the right lung.

He was excessively uneasy under restraint, and wished to start on a "business tour" South and West. This being objected to, he dissolved partnership, and gave up his business connections. As he had in February been advised by his attendant physician to go to a milder climate, he now resolved to try a voyage up the Mediterranean, and on the 5th of June sailed for Malta. After considerable suffering and a bad voyage, he arrived there July 12th. He was told by an English physician that the lower lobe of his right lung was consolidated. After remaining two weeks, he returned home by way of France and England, and reached Boston Aug. 25th, about in the same condition that he was in when he left; certainly not improved. He was not confined to his house, but passed his time in visiting his business and other friends, walking moderate distances, and driving two or three miles, without much effect or inconvenience.

Sept. 6th: Twelve days after his return, he had hæmoptysis, and expectorated about one-half pint of fluid blood, and a noticeable quantity of frothy mucus. The hæmorrhage recurred the same day, and after an interval of two days took place two or three times daily for six days more. The whole number of bleedings was fifteen, and the amount discharged about five pints.

TREATMENT.—Rest, abstinence. Blisters. Acet. plumb. and opium.

Sept. 14th: Hæmoptysis ceased. Right lung, lower lobe, as previously; mucous râle and occasional clicks in the middle one-third; also in lower part of left. Respiratory murmur and percussion normal elsewhere. Considerable debility and sickly aspect from loss of blood, &c. Pulse 80, above which it never had risen except under temporary excitement.

Almost immediately on the cessation of the hæmoptysis, he began to have febrile paroxysms in the after part of the day and evening; at first very slight, but gradually increasing in duration and intensity; followed by sweats, which at last thoroughly drenched his clothing. The pulse rose to 90, and in a few days to 100; then to 110–15, and during the last week of

his life to 120-30. Respiration 34 to 40 per minute, varying during the same visit. The bowels became irregular, alternately costive and loose; the appetite was craving for more than could be easily borne. *The crepitation in the left lung gradually extended upward.*

Oct. 5th: Twelve days before death, I saw him in consultation, and observed as follows: On percussion there was less sound, generally at the right, and particularly so in the lower part of it. There was evidence of great obstruction in both lungs, at the lower portions. Cracklings coarse, at the right; *fine explosion of crepitus râle in the same part of the left*; above, something similar in both, mingled with a sonorous râle. Loud and rough respiration, but evidently the most pure that could be found, was perceived under the clavicles. Patient was very feeble, could not rise in bed without assistance, and was unable, owing to faintness and dyspnœa, to remain but a few moments in a sitting posture. The dyspnœa was very great and manifest. Patient spoke only in whispers, and preferred to write his wants. Pulse 122, feeble. Expectoration ragged opaque sputa and a watery fluid. Urine dark, slimy. Digestion good, though tending to irregularity of the bowels. Sweats, copious at night.

I learned from Dr. C. that the crepitation gradually extended, and finally by the 16th of October occupied the whole lung to its apex. Within a week before, a similar state was observed in the right lung. Percussion being unpleasant to the patient, was not persisted in. Flying pains occasionally in both chests.

Oct. 15th: Much blueness of nails; coldness of extremities; almost pulseless; dyspnœa intense.

Died in the evening of Oct. 18th, at 7½ o'clock.

An autopsy was made under great difficulties, at 3½ P. M., Oct. 21st.

Great emaciation.

On raising the sternum the lungs looked pale, but over the right were patches of thin old opaque false-membrane. This was found to extend over almost the whole of the organ. The two upper lobes were removed with comparative ease. The lower lobe was very firmly adherent, so that the pleura costalis was ruptured in raising that part of the lung.

The left lung was very slightly adherent, but chiefly in its lower half, by a more delicate membrane, the major part of it being of recent soft effusion.

The right lung was diseased as follows: Not a particle of the lower lobe was healthy, but it was broken down into a ragged cavity, having exactly the aspect of a common tubercular cavity, as found at the top of a lung. The walls of this cavity were from a quarter to half an inch thick, and it was traversed by numerous bands, all of which were dense and impervious to air. There were a few crude tubercles. The middle lobe was studded with crude opaque tubercles, and the interstices, though containing a little air, were denser than in health. At its lowest part there were a few small cavities, containing pus, and which had not communicated with the bronchi. In the upper lobe were a few small tubercles, but it crepitated and was healthy, except that it was very cedematous.

The left lung was covered on its lower lobe, and the lower part of upper lobe, by a delicate membrane, which was soft, recent, and of a deep, mottled red, aspect. The lower lobe was uniformly dense, as from pneumonia. The upper lobe was pale, swollen, and looked emphysematous; tubercles were easily felt in its interior. On incision of the lower lobe it was found everywhere solid, and of a mottled gray appearance, like the gray infiltration of tubercle, being less friable, less granular, and less purulent than pneumonia. A few opaque distinct tubercles in it. The upper lobe, on incision, showed many tubercles, *most numerous at its lower part, and gradually diminishing towards its apex, which was almost free from them, and was the most healthy part of either lung.*

Heart normal; left ventricle filled with soft, black, grumous blood; valves, all well.

Intestines, examined only in spots, seemed healthy. No ulcers near the ileo-cæcal valve. Mesenteric glands, well. Liver, medium size, healthy, dark. No tubercles seen in any of these organs.

It should be stated that, by two microscopists, tubercular corpuscles were found in abundance in the crude tubercles, and a few in the gray semi-transparent condensation of the left

lower lobe, and, on the contrary, none of the appearances usually seen in pneumonia.

The following may be the condition of the lungs in these cases. I observed this peculiar condition of the lung in a young woman, who died at the Massachusetts General Hospital, Dec., 1849. I would premise that she died after two or three weeks illness, of undoubted pneumonia of the right lung, as it seemed to all who saw her. She had the rusty sputa of that disease. The lung was generally tougher than normal, and covered with a thin recent membrane. The lower lobe was solid, and on incision it was found generally with a reddened surface, but studded with masses varying from the size of the smallest tubercle up to that of a walnut, opaque, white and solid, resembling, in fact, in all their characteristics, distinct, isolated tubercles. Had we not known the previous symptoms, we should have undoubtedly considered them as tubercles. The apex of the lung was less seriously diseased throughout, but it contained a few of the smaller masses, and a little cavity. A few of the same bodies were seen in the lower part of the upper lobe.

Notwithstanding the symptoms of pneumonia, I am inclined to believe these bodies to have been tubercles of recent origin, which had excited and kept in existence a hepatized condition of the lung.

Analysis of the Preceding Facts.

I have noticed but eight* cases of this combination of rational and physical signs, since January, 1842, *i. e.*, during nearly thirteen years. Six of these I have already laid before the Society. The two additional cases will be given under the head of DIAGNOSIS. All excepting one have either died of phthisis, or the disease is going on at the present time. That one, after a severe hæmoptysis and the rational signs of phthisis, is said to be healthy at the present time.

Considering it a form of tuberculosis, it is quite rare. Dur-

* Since this paper was prepared I have seen three more cases, and am induced therefore to believe the disease to be rather more common than I have heretofore supposed.

ing the same number of years, I have made records of more than 500 cases of Tubercular Disease, and as only three of the above cases occurred in my own immediate practice, I think we may infer that not more than once in one hundred and fifty or two hundred cases, shall we meet with this anomalous form of tubercular development.

The *ages* of the patients present some curious phenomena, which I think can scarcely be explained by the fact of the greater number of all tubercular cases occurring in early life. Of the seven cases, either fatal or now threatening a fatal result, the oldest is 34, the youngest is 22 years of age, and the average is 25 years.

The *sex* in all the cases was male.

Temperament.—All of the persons thus affected were of an unusually active temperament; and this, taken in connection with the nervous irritability,—apparently the result of the disease,—seems to indicate that, other things being equal, the active, intense excitement of the present time, in every species of business, *may* predispose to this kind of tuberculosis. Of the eight, seven *may*, in the above particular, be fairly ranked with "*Young America*;" all of them having been born in New England, and in the performance of daily duties may be ranked as follows:

Professions.—Three of them were salesmen of large mercantile firms, and were called to a constant, unintermitting exercise of the mind, and exposure of body as travelling agents, &c. Two were clergymen, young, active, and devoted preachers of earnest orthodox doctrines, three times each Sunday, and perfectly reckless of all hygienic rules in the performance of their parochial duties during the week. One was a student in college, stimulated to the last degree with an honorable but deadly emulation of his peers for a prize in declamation, and, Demosthenes like, spouting in the open air. Finally, two traders, both of whom may be considered as being of the above described character, and each claiming to do nearly twice as much as any other man. Not one of the eight presented a single phase of the sluggish disposition. A certain railroad

speed of mind and of body, and a kind of superhuman disposition for work, was the distinguishing trait of all of these unfortunate persons.

Symptoms Precursory of the Serious Symptoms, which Induced the Patient to Consult a Physician.

Cough.—This was noticed as slight or occasional in four, for a space of time varying from three weeks to many months, but it was never a marked symptom. The patients hardly noticed it, and had not consulted a physician for it. In one, it soon became urgent, and ushered in the severer symptoms of disease. In one only was it stated that the patient had never been liable to cough.

Expectoration.—Two had no sputa. In three, hæmoptysis had occurred; and in one it occurred several times.

Thoracic Pains.—In four only were they noticed. One of the persons had no premonitory pains. In three, pains occurred. It was slight in two; and severe in one only, viz: over the region especially affected by disease.

Aphonia.—Had occurred months previously in one case.

Digestion.—Usually not much disturbed; but in only one was it said to be perfect. It was bad in one, and there was loss of appetite and constipation in others.

Urine.—Noticed twice. Once a strong odor and sediment were noticed. In the other case, it was normal.

Fever, &c.—Noticed in five cases. None in two cases; considerable only in one.

General Health.—Mentioned four times. In three it was a little disturbed. Patients felt a little ailing, or had lost a little flesh, but all were able to attend to their business till seized with the more acute symptoms, and needed the attention of a physician.

Exciting Cause.—Loud speaking in the open air, and a very severe exposure to a cold wind in winter, were mentioned as the first causes of the trouble in two cases. In other cases it was not manifest.

Symptoms after the attack, or after the physician was called.

Cough existed, more or less, as in common phthisis, in five out of six cases. In the sixth there was no cough, only a slight occasional hem, for a long time after very extensive physical signs were manifest.

Expectoration.—In one, who had no cough, there were no sputa. In the five others there were the varied appearances seen in phthisis, viz. : in two, hæmoptysis ; two had greenish sputa ; one had thin and glairy mucus. At times there were ragged and opaque masses.

Thoracic Pains.—In only one were they a prominent symptom. In this they were agonizing on motion. In two they were described as dull.

Dyspnœa.—This was a *constant* symptom. It was slight usually, and scarcely perceptible at first, or only on exertion ; but becoming more as the disease gradually invaded the lung. At the latter stage of the disease it was very great, and caused lividity.

Digestion.—Costiveness occurred in three. In two there was some oppression after food. In one only was there decided dyspepsia of some months' duration.

Urine noticed only twice. It was natural in one ; dark and of strong odor in another.

Fever.—Little or no fever observed at first in five. But in three there were febrile symptoms at last, as in phthisis proper.

Cephalic Symptoms.—There was an undue restlessness and nervousness about themselves in three of the cases. No delirium or other serious symptom, except toward time of death.

Strength.—In the early part of the disease the patients did not lose their strength. When a fatal result occurred, there was, of course, a gradually increasing debility, as in common phthisis.

PHYSICAL SIGNS.—The most marked sign, and almost pathognomonic of the disease, was a *fine explosion of crepitous râle, exactly like that heard in pneumonia, and like that perceived at the lower part of the back, or just about the angle of the scapula,*

when a certain amount of bronchial respiration was heard at the very lowest part. Unlike the crepitous râle of pneumonia, *it persisted without change for a great length of time, varying from weeks to months.* This sign was heard in all. It was in the lower third of the back in five, and in one of these it extended slightly, and by a well-marked outline, to the front. In one only was it confined to the front. It occurred twice in the right, and four times in the left lung. The shortest record of its existence (and this is imperfect, because the patient left town while it actually existed,) was forty-six days. The longest was twenty-two months!

In four cases, pectoriloquy or bronchophony ensued, after a great length of time, in the spot where the râle was heard; and subsequently, or perhaps at the same time, disease attacked the upper parts, or those more usually seized upon by tubercular disease.

TREATMENT.—In five, an antiphlogistic course was pursued, viz: leeches in two, and mercurials in three; in one instance to slight pyalism. But no effect was produced, the crepitous râle continued as if no treatment had been adopted. In four of these cases the usual treatment for phthisis was subsequently used. In the fifth the iodide of potassium was used faithfully, but without avail apparently, for the disease is advancing.

In cases 7 and 8, detailed under the heading of diagnosis, some effect seemed to be produced either by time and nature or by the treatment.

Appearances at the Autopsy.

In only two have I made an autopsy; both of these were quite chronic. In both the disease was peculiar in the lobe where the crepitous râle had been heard. It was of a uniformly dense structure, or with this were numerous isolated tubercular bodies, and small cavities, containing pus. The lobe, when incised, presented a smooth cut, was less friable, less granular, less purulent than is seen in the third stage of pneumonia, to which it was allied in general aspect. This appearance had

invaded the whole of the lobe of one lung, and, partially so, the lower lobe of the other lung. In one case this part was occupied by a large irregular cavity, exactly such as is seen in tubercular lungs at the apex of the organ.

Usually the disease diminished from below upward, so that in one case the upper lobes were almost free of tubercles, while the middle portions were studded with opaque small tubercles amid healthy lung. In one a cavity was found at the apex. In this case the lower lobe was dense, as above described.

The *pleuræ* were always adherent, and generally very strongly so; but over one lower lobe that was quite dense was seen a recent soft membrane, and the pleura was of a vivid redness.

In one instance, I subjected the specimens in the tubercles, and the gray solid portions, to the examination of two able microscopists. Neither of the examiners found the usual inflammatory corpuscles, but the so-called tubercle corpuscle in abundance.

In a third case, (not reported, because seen imperfectly, except as to the diagnosis, and since this paper was commenced,) which presented most of the phenomena already described, only in a more acute form, the following appearances were noticed by Dr. Ellis,* who has kindly allowed me to have them as illustrative of this paper. It seemed as if a regular gradation could be traced from the inflammatory corpuscle in the parts least diseased, and looking least like tubercle, down to the collapsed and shrivelled "tuberculous" corpuscles found in the more diseased parts. I shall return to this subject under the head of "Pathology of the Disease."

* Dr. Ellis made the following report on some small pieces of the lung of a young man who died after hæmoptysis and a comparatively short disease, but with the physical signs as stated above :

To the naked eye the tubercular deposit was present in three distinct forms : 1st, as isolated, round, yellowish white granulations, about a line in diameter, and separated from each other by pale red pulmonary substance ; 2d, as a yellowish white, almost diffuent or gelatinous matter, a small quantity of which only was seen ; 3d, as a yellowish granular substance, containing but little moisture. This last form was most abundant, occupying, in large irregular masses, the place of the pulmonary tissue.

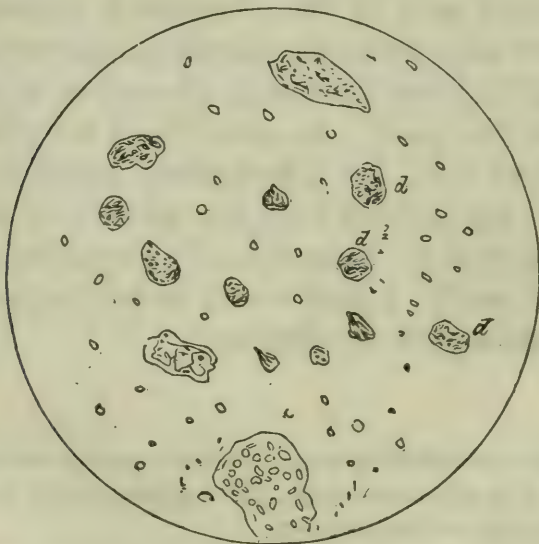
On examination with the microscope, the first two varieties were found to

FIGURE 1.



contain essentially the same elements as represented in Figure 1, viz: epithelium, inflammatory corpuscles, and others of various sizes (the latter unaffected by acetic acid), forming a regular series down to the so-called tuberculous corpuscle. In addition to the well marked epithelium cell, others were seen in which the nucleus was almost obscured by the minute globules, which entirely filled, and gave the peculiar character to, the inflammatory corpuscle.

FIGURE 2.



The appearances in the third variety, are represented in Figure 2. Here the larger corpuscles had almost entirely disappeared, a few fragments only remaining, while the number of so-called tuberculous corpuscles had much increased.

Numerous minute globules and granules, were floating about in all the specimens.

The microscope used was one by Nachet, and with a magnifying power 533 diameters.

FIGURE 1. *a* Epithelium. *b* Inflammatory Corpuscles. *c* Granular Corpuscles, of various sizes. *d* The so-called Tuberculous Corpuscles.

FIGURE 2. *c* Inflammatory Corpuscles partially disintegrated. *d* Same as in Figure 1.

DIAGNOSIS.—This is not always very easy, and at the first view of the facts, it seems to be almost impossible. All the physical signs are those usually attributed to pneumonia, and they are situated in the portion of the lung usually attacked by pneumonia. This class of cases shows perhaps better than most others the great importance of an accurate comparison of the rational with the physical signs. For if we depend upon either exclusively, we shall certainly fall into error. For on the one hand, very serious and alarming symptoms may exist with very trivial signs at the base of the lungs, the apices being entirely healthy; and on the other, there may be almost no rational signs, and the patient may be really almost wholly well, while by the physical signs we shall discover extensive disease at the lower portions of one lung. The two most important elements toward making an accurate diagnosis are—1st, the unusually *long persistence* of a very minute crepitous râle in a limited portion of the lower part of a lung; and 2d, the existence of such a râle in the same part, without any but perhaps the most trivial rational symptom. Cases 1, 2, 4, and 6, may be ranged in the first, and cases 3 and 5 in the second class.

It will be easily seen that in the first class it will be impossible to come to an accurate diagnosis at the first visit. A certain length of time is absolutely necessary. At present I fear it will be impossible to be perfectly sure even after many weeks, or it may be months, of duration of the râle.

The following cases illustrate this remark;—

CASE VII.—The Rev. Mr. C——, aged 27, born in Massachusetts, always a scholar, and always in excellent health, except that he had been liable to constipation, hæmorrhoids, and severe headaches. He had always overtaxed his brain, and had used in earlier times, very freely, tea and coffee, but not tobacco. He had always supposed that his lungs were especially strong, and had been accustomed to preach loud and long, often in the open air; and three times each Sunday he performed his ministerial services, with more than ordinary earnestness. I saw him July 5th, 1853, in consultation, for the

following train of symptoms:—It appeared that four weeks previously, after having been unusually free from headache for some time, he was suddenly seized with cephalalgia, nausea, and vomiting. A little blood was seen in the matter rejected, and the patient felt a severe “blow” at the epigastrium, during one of the last efforts to vomit. The succeeding day, although he was weak, he was easier, having only slight headache on exertion. Forty hours afterward he preached moderately, and felt no inconvenience save debility. During the following week, however, he studied very hard, and preached as usual three times on Sunday. Great prostration ensued. The next morning he hawked up a little clotted blood, and on Tuesday, two tablespoonfuls of arterial blood. He then took to his bed from weakness, and during the four following days raised more or less, never, however, very copiously. During this period he had no tickling or discomfort in his throat; the cough was slight, similar to what he had been liable to for a year, after speaking, but which he had never thought of as of any importance. He had had, two days before I saw him, a slight pain across his chest, and a little under the left clavicle; slight dyspnoea on walking. His appetite had been good until a few days. For his costiveness, he had taken salts and oil four or five times. He had had no chill or heat, but had had an occasional sweat, and had lost flesh.

His hereditary tendencies were not to pulmonary disease.

At my room he seemed quite well, but thin. The tongue had a thin coat; he did not cough; had no change in the voice.

The physical signs were as follows:—On inspection, nothing peculiar. On percussion, fair every where. If any difference, there was a slight difference of pitch in the clavicular region, in favor of the left. Murmur quiet, but vesicular in front, although at times I thought there was occasionally a little less expansiveness about the right than the left clavicle. Voice normal. Behind: Percussion not very clear any where. But the most striking and peculiar sign, was *an explosion of the most minute crepitus râle heard, on full breath, in the lower third of the left back.*

He had been taking an iron mixture. This was continued. He was directed to give up preaching, and to use croton oil to the lower part of the chest.

He returned immediately into the country, and I saw him again July 23d (in about twenty days). The crepitation had then almost wholly left him. It could be just heard on a full inspiration.

Daily bathings and frictions. Chew rhubarb for costiveness. Continue croton oil. Horseback exercise.

Sept. 8th : Had gradually been getting better, and had not preached until two weeks before, when he felt as well as ever. The digestive system had been well, except that he had piles. No cough, but he had raised by hemming in the morning a green substance. Auscultation and percussion seemed perfect. No râle anywhere.

Ung. gall. and stramonii ordered for the piles. Allowed to preach once each Sunday. Horseback exercise five to ten miles daily.

The patient seemed well ; the congestion of the lung was gone, and I saw nothing more of him for exactly one year, when he again called, and related as follows :—

He had preached *twice* daily until July, without cough or any trouble but his habitual costiveness. Eight weeks previously to his visit, he had again a cough, and had raised bloody sputa and some frothy white fluid. His throat had been sore, with almost complete aphonia. One day he had raised a bloody clot with relief to the throat. He could not remain seated without having an unpleasant sensation across his chest ; an excessive faintness and “all gone sensation” along the sternum. He coughed a little in the morning, perhaps ten or twelve times. He had no fever, but a slight heat of the skin ; slight pain in the left chest, six weeks before his visit. At the visit, his pulse was at 96, and his appearance was not very morbid.

The only sign was a little less respiratory sound under the right than the left clavicle, corresponding to where there were *very obscure* signs at the previous visit.

He asked if he might resume his duties in a village near Boston.

I told him that I feared the slight difference of murmur noticed above, and that if he could travel it would be better to

do so. If that were impossible, he must probably be settled. But he must never preach in the evening; he must use porter or wine, and if pain should come on in the chest, he must use croton oil, and, finally, apply nitrate of silver to the throat.

About a week subsequently I examined him again, and was fully confirmed in the opinion that there was a slight tubercular development at the summit of the right lung. This opinion was confirmed by the independent examination of another physician upon whom the patient called soon after I had seen him, having been not wholly satisfied with my own views of his case.

Jan. 20, 1855: I have seen this gentleman recently. He undertook the charge of a parish, and has steadily failed since; and now has crackling and every sign of tubercles throughout the whole of the upper lobe of the right lung.*

The preceding observation is very interesting as affording another illustration of the usually fatal indications to be derived from a fine crepitus râle existing under the circumstances I have noted above. But unlike the others that were fatal, the râle was dependent either upon something more transitory than tubercular matter commonly is, or if dependent on a collection of miliary tubercles, these tubercles were cured by the treatment pursued. I am inclined to the former opinion. But whatever may have been the cause of the sound, the observation seems to indicate that a tubercular diathesis existed from the first, which finally showed itself in its usual place.

But the following observation presents the most formidable difficulties in the way of diagnosis. A year or two more of the patient's existence may class it in the same category with the preceding; but, at present, it stands alone. I have met with no similar case:—

CASE VIII.—I. L. H——, aged 38, Roxbury, superintendant of a steam planing mill. Usually in youth he was in robust health. At the age of 18, he had lung fever, and two or three slight febrile attacks afterward, before the illness began for which he consulted me. For several years he had been liable to headache and costiveness. Two or three years before, had

* This gentleman died recently of phthisis, and cavities were found in both lungs.

slight hæmoptysis after a violent strain, and subsequently he had a disposition to hem. He had often had bloody sputa, and twice had raised more than half a pint. No other prominent symptom, except perhaps a dull pain in the thorax, and some dyspnœa on going up stairs. The exertion of going up an eminence, and, also, excitement of mind, had produced the hæmorrhage. He had been able to lie on either side ; no palpitation. Appetite, usually good ; bowels, a little costive, at times, for two or three days ; urine, well. No hectic, or emaciation, or much debility.

At the time of his visit to my office (Jan. 21, 1853), I found him a tall thin man, but not very unhealthy in aspect. He had at times a slight tickling in his throat. His pulse was regular, 72. Right tonsil a little enlarged ; uvula, well. Twenty-four hours previously, he had raised two or three ounces of blood, without coughing or much exertion ; and for several days he had, perhaps a dozen times, one or more sputa, daily. He was afraid to lift even the smallest weight, for fear of hæmorrhage recurring.

On examination of the chest, it appeared long, but contracted toward the base. Murmur, everywhere good ; no râle, even on coughing ; voice, good ; heart, normal.

Seven days afterward I saw him again, and learned that he had not raised more than a tablespoonful of blood, and he had felt well save that he had been costive, and had had a little pain in the bowels. On auscultation, similar results to the above. but *on coughing* a slight crumbling was heard in the lowest part of the right back, and *a distinct crepitation in the infra axillary region*. Voice, normal ; no bronchial respiration ; percussion gave a little less sound there, but no real dulness.

A laxative pill and acid sulph. dilut. gtt. x. were ordered three times daily. Croton oil to chest. Gentle out-of-door exercise.

March 11th : He had been gradually getting better, and had attended to business slightly. For a few days before the visit, he had felt rather less well, and on the 9th raised a little blood, followed by half a pint on the 11th, dark at first. He however had not desisted from business. Omitted drops a few

days before, and had been taking half a glass of madeira wine three times daily.

Crepitation as before, and perhaps a little more toward the mamma. Pulse 84, even after exertion.

Resume acid. Omit tonic. Continue external irritants.

He soon afterwards resumed more fully his business, but avoided all violent efforts. He had occasionally attacks of hæmoptysis, and Nov. 11, 1853, I examined him, in order to see if any trouble remained. None could be found, and the patient seemed well, though unable to labor as hard as before. He continues well now (June, 1855).

In this case I certainly feared the development of tubercles, from the rational signs, and from the absence of any rational signs of pneumonia, and finally, from the persistence of the crepitation (certainly three months). It is the sole one of eight cases, in which the same or similar symptoms and signs have existed, which has not resulted fatally, or the patients are now ill of chronic disease. It is certainly a stumbling-block in the diagnosis of such cases; but the patient may within a year or more prove to be phthisical, as in case seven.

From these two observations it is evident that my first remark, in regard to the value of the long persistence of crepitation, as *pathognomonic* of this form of tuberculization, must not be received with *entire* confidence. Nevertheless, in seven out of eight of the cases the rule holds good, and possibly even in the eighth case the patient may become tuberculous, as I have already suggested.

In truth we may say that if in any case of pulmonary disease which shows itself, either by a few of the more prominent signs of phthisis, such as hæmoptysis, a slight cough, or a disturbance of the general system, &c., or if there be scarcely any thoracic symptom, and yet the patient complains of being less well than usual, we must always make a decidedly unfavorable, though not absolutely fatal, diagnosis and prognosis, if we find a crepitation in the lower portions of one lung, without any other

sign of pneumonia ; more especially if this sound continue without variation for more than two or three weeks.

PROGNOSIS.—The prognosis need occupy us but a very short time, for we see from the preceding article it is very unfavorable for any one to have symptoms and physical signs like those described in the preceding part of the paper. It is not simply unfavorable, but it may be deemed almost necessary to make a fatal prognosis.

PATHOLOGY OF THE DISEASE.—This question is deeply interesting. I think the rational and physical signs, and the results of the microscopic examination of the lungs after death, place this class of cases of anomalous tubercular development, just on the disputed confines between tubercle and inflammation. They do in fact show how the two may coalesce, or pass easily from inflammation to tubercle, and *vice versa*, how tubercle may excite inflammatory action. Looking more closely, we see that the physical signs ally this disease, *at first*, certainly very strongly to pneumonia. By their durability, however, they suggest either chronic pneumonia or phthisis. On the contrary, the rational signs, if at all significant, for at times they are so slight as to indicate nothing distinctly ; these rational signs point to phthisis. Thus, during the whole of the disease, the thoughts of inflammation and of tuberculous disease present themselves. At the autopsy a peculiar appearance presents itself ; a mingling of tubercle with what might pass for chronic pneumonia, and Dr. Ellis has very beautifully traced, by his microscope, in one case, a regular gradation from evident inflammatory exudation corpuscles, down to the so-called tubercular cells.* If it be pneumonia, however, at first, it certainly shows by its course, and by the want of influence exerted by antiphlogistics in its treatment, that it is very different from, and more persistent than, common pneumonia. It may, however, be regarded by some as a scrofulous, slowly developing, inflammation, and not acute plain pneumonia, such as we meet

* See note of Dr. Ellis' examination under " Diagnosis."

with in ordinary practice, and which runs its course in from twenty to twenty-five days.*

TREATMENT.—Alas that it should resemble phthisis so much as it does in usually resisting all treatment. It is true that in two of the cases the crepitus râle disappeared after months of duration, and under treatment, but in one it disappeared only to allow, if possible, graver and more positive signs at the apex. In all the others the disease went steadily onward, unchanged even in the slightest particular by anti-phlogistics, mercurials, blisters, tonics, &c.

My advice in another case, would be, not to rely on medicines, but on constant active out-of-door employments and external irritants. Travelling in foreign climates for the sake of changing, not merely the sky, but likewise all previous habits, should be recommended. A constant irritation by blisters or croton oil should be kept up. In the later periods the cod liver and fusel oils might be resorted to by the practitioner.

This is, in certain respects, a sad termination of our investigations. If, however, the results to which I have arrived are true, they are important, in enabling us to make a more sure diagnosis and more careful prognosis, while they will at least tend to prevent us from the violent heroic, or strongly anti-phlogistic treatment, to which the physical signs undoubtedly tend to lead us.

* Whilst this paper is passing through the press, I find an article by Dr. Cotton,* of London, in which he describes a similar disease, and considers it "chronic pneumonia." Dr. C. does not give any statistics, but he considers that in "by far the greater number of cases the disease terminates favorably under timely and judicious treatment." The differential diagnosis of this disease, from phthisis, Dr. C. decides by the physical signs, which are almost exactly similar to those given in this paper. I cannot agree with him entirely as to the diagnosis, and certainly my experience does not support Dr. C's prognosis. It is an interesting circumstance, however, that two independent observers have been led to notice the phenomenon in question in two such remote quarters of the globe.

* London Medical Times and Gazette, March 31 and April 14, 1855.

Selections from Favorite Prescriptions of Living American Practitioners. (Continued.) By HORACE GREEN, M.D.

Tonics and Stimulants.

Although these two agents are here arranged together, and are frequently combined in their administration, yet they differ essentially in their therapeutic effects. Tonics, although not confined in their action to the muscular fibre, are generally defined to be those "medicinal agents which restore relaxed and weakened muscles to their state of healthful tone, which renew their elasticity, contractibility, and tension,"* and thereby impart strength and vigor to the whole system. *Stimulants*, by increasing the sensibility and irritability of the parts to which they are applied, powerfully augment, through the nervous system, the organic actions. Stimulants exalt the functions of innervation and circulation without imparting permanent strength to the system. Tonics give tone and strength to the muscular and nervous system at the same time, without increasing, necessarily, the action of the heart. "Tonics give strength, stimulants call it forth."

The tone or energy of the system which is gradually acquired through the administration of tonics, becomes permanent, and is not replaced by a consequent exhaustion or depression. The introduction of stimulants into the living body is quickly followed by increased energy of the vital actions, and is succeeded as rapidly by a state of depression or collapse. Stimulants are not indicated when inflammation is present, but "tonics, by imparting strength to the capillaries, operate beneficially in inflammation, even when the use of the lancet is requisite to keep down the action of the heart."† Both tonics and stimulants may produce their effects on the system, by making their impression chiefly on the stomach, or by operating through the medium of the blood, or through the medium of the nerves.

As tonics, strictly speaking, are neither stimulant nor sedative, they may be appropriately, and, often, very usefully com-

* Thompson's Therapeut.

† Thompson.

bined with either. In many cases, where tonics are indicated, and yet from some cause are not well borne, they may be administered, especially the martial preparations, with much safety, and often with great advantage, by combining them with some of the peculiarly sedative medicines. The different forms of iron, whether employed as found in the natural chalybeates, or in the artificial preparations of the chemist, make their primary impression on the digestive organs, augmenting, ultimately, the power of the secretory and excretory systems, and rousing the nutritive faculty in every part of the body.

The following combination of a chalybeate with a stimulant and a sedative has, for many years in our hands, proved a most valuable tonic, particularly when administered during convalescence from disease, and in all debilitated and anæmic cases.

R.	Extracti Conii,	℥ij.
	Sesqui oxydi ferri,	℥iij.
	Tinct. Columbæ,	℥iss.
	Syr. Toluta,	℥ss.
	Ol. Gaultheriæ,	gtt. x.
	Aquæ fontanæ,	℥ij.

Fiat mistura ; cujus sumat coch. parv. mane ac nocte.

Or the following may be substituted :

R.	Sesqui oxydi ferri.	
	Extracti Taraxici,	aa. ℥ss.
	Vini Sherii,	℥vj.
	Tinct. Gaultheriæ,	℥ss.
	Aquæ font.	℥iv.

M. Capiat coch. magn. bis in die.

The following is a very excellent tonic, and may be exhibited whenever any of the ferruginous preparations are indicated.

R.	Ferri Citratis,	℥ij.
	Syr. Citri. <i>vel</i> Aurantiæ.	
	Aquæ Menth. pip.,	aa. ℥ij.
	Aquæ puræ,	℥iv.

M. Exhibe cochlearium purum ter quaterve in die.

In young anæmic females, with indications of a chlorotic condition of the system ; and also in children of strumous habits, the *phosphate* of iron, exhibited in combination with the sulphate of quinine, is a therapeutic agent of great value.

R.	Ferri Phospatis,	℥j.
	Quiniæ disulphatis,	gr. xii.

M. Fiant pulv. xii., quarum. capiat unam bis terve in die.

A physician of great experience, and celebrated for his successful treatment of diseases of females, has employed for many years, and with much advantage, the subjoined combination of an alterative and a tonic in the management of certain forms of uterine disease.

R. Syrup. Ferri Iodidi, 3j.
Tinct. actææ racemsoæ, 3v.
Tinct. Rad. Aconiti, 3iij.

Fiat mist. cujus cap. gtt. xx. ter in die.

We have seen engorgement of the os tinæ and non-malignant induration of this organ, disappear rapidly under the persevering internal administration of the above tonic ; while, at the same time, the following ointment was applied once a week, by means of friction, with the finger, to the indurated os.

R. Extracti Hyoseyami.
Extracti Conii.
Extracti Belladonnæ, aa. p. e.

To each ounce of which mixture add one drachm of iodide of potassa—mix thoroughly, and apply as above.

R. Ferri Sulphatis, 3ij.
Potassæ Iodidi, 3iss.
Tinct. Colombæ.
Syrup Zinziberis, aa. 3ij.

Fiat mist. capiat coch. parv. ter in die.

This mixture may be exhibited with advantage, whenever we desire to promote the absorption of glandular enlargements, and in all cases where a tonic and an alterative are indicated.

Not unfrequently the general practitioner will encounter cases of obstinate intermittent ; and of uncontrollable neuralgic affections, which will resist, altogether, the effects of the ordinary antispasmodics, when singly administered. In such instances, we have often succeeded perfectly, by the combination and exhibition of a vegetable and mineral tonic,—as the following :—

R. Liquor Potassæ Arsenitis, f.3iss.
Tinct. Cinchonæ, 3iij.
Syr. Aurantiæ, 3j.

M. Hujus mist., sumat cochl. min. bis terve in die.

During the last two years, intermittent fevers have occurred more frequently, in some parts of this city, and in the vicinity

of the city, than for many previous years. In some of these cases, where the disease has proved obstinate, not yielding to large doses of quinine, long continued, we have found it to be promptly arrested by the administration of a teaspoonful of the following mixture, twice or three times a day,—the last dose being administered a short time before the period of the anticipated paroxysm.

R.	Quiniæ Sulph.,	3j.
	Liquor potassæ arsenitis,	f.3ij.
	Acidi Sulph. Aromat.,	f.3j.
	Tinct. Cinch. Co.	
	Syr. Zinziberis,	aa. 3ij.

When the preparations of arsenic are employed, it is safest to give the medicine after a meal. When thus exhibited, larger, or more effectual doses may be given with more safety, than when taken fasting. Should, however, gastric irritation arise, under its use, or swelling and stiffness of the eyelids occur, the medicine should be immediately discontinued.

Should it from any cause be desirable to administer these remedies in the form of a pill, we may employ the following formula :—

R.	Acidi Arseniosi,	gr. ij.
	Quiniæ disulphatis,	3j.
	Conserv. Rosæ,	3ss.

Misce optime, et fiat massa, in pilulas xxx. dividenda ; sumat unam bis quotidie.

We have had, recently, much experience in the use of the different preparations of Manganese, and have become fully satisfied, that this mineral tonic, in its different combinations, will prove a most valuable addition to our pharmaceutic preparations.

The presence of Manganese in the blood, has been fully established by the experiments of MM. Millou, Hannon, and others ; and, recently, M. Burin, in a memoir presented to the French Academy of Medicine, has given an analysis, by which he shows the amount of manganese in the blood globules, and exhibits the condition in which it exists.* It is indeed as constant an ingredient of this fluid, in its normal condition, as iron, and it is well known that a deficiency in quantity, of both these met-

* Bull. de Therapeutique.

als, may be observed in the blood in many cases of anæmia, chlorosis, tuberculosis, &c.; and hence the employment of manganese is proper, in most instances, where the administration of iron is indicated. Frequently, both may be given in combination, with great advantage.

The most important preparations of manganese, for pharmaceutical purposes, are the *phosphate*, the *malate*, and the *iodide* of manganese.

After the subjoined formula, we have administered, in tuberculosis, to a large number of patients, the phosphate of manganese, with most favorable results.

R.	Mangnesii phosphatis,	℥ij.
	Tinct. Cinchonæ,	℥iij.
	Syr. Sarsæ,	℥iv.
	Mucil. Acaciæ,	℥j.
	Ol. Gaultheriæ,	gtt. xx.

Fiat mistura, cujus sumantur, coch. duo vel tria minima bis terve in die.

Or we may administer, under similar circumstances, and to the same amount, the manganese combined with some of the preparations of iron ; as in the following :—

R.	Mangnesii Phospatis,	℥iss.
	Ferri Phospatis,	℥iij.
	Tinct. Columbæ,	℥ij.
	Syr. Tolutan,	℥iv.
	Ess. Gaultheriæ,	f.℥j.

These mixtures should be kept in well closed bottles, and as the manganese is not altogether soluble, the medicine should be shaken before being administered.

The malate of manganese is considered by some practitioners a more eligible preparation, inasmuch as it is quite soluble, and the base of the salt is in the form of proto-oxide, the acid being easily digested.

R.	Mangnesii malat.,	℥ij.
	Tinct. Cinch.,	℥ij.
	Syr. Simp.,	℥iv.
	Ess. Limon,	f.℥j.

Fiat mistura, date coch. parv. mane ac nocte.

The iodide of manganese is an efficient remedy in the treatment of glandular enlargements, especially those of the neck,

and of the spleen, in constitutional syphilis, and in the anæmia arising from scrofula and from cancerous affections.

It may be administered in the form of pills; or, as a mixture in the following formula:—

R.	Manganesii Iodid.,	3ij.
	Tinct. Cardamon,	3j.
	Syr. Sarsa,	3v.
Misce.	Sumat coch. parv. bis terve in die.	

In a paper published in a late number of the *Bulletin de Thérapeutique*, M. Petriquin recommends a combination of manganese and iron, as a highly valuable agent in the treatment of disease. He has found these combined medicinal bodies, especially useful in blood diseases, such as the chloro-anæmia, after hæmorrhage, operations, metrorrhagia, &c. In the chlorosis which appears about puberty, in that also which occurs at the critical period of women, especially when profuse hæmorrhage prevails, and in the depraved state of the blood, which succeeds intermittent fevers, M. Petriquin has found the fero-manganese preparations of remarkable efficacy.

Note on the Bile of the Terrapin. By CHARLES M. WETHERILL,
Ph.D., M.D.

Streaker, in his researches upon the bile of different animals, has drawn attention to the singular fact that the bile of sea fishes, which live in a medium so rich in soda salts, contains for base chiefly potassa, while the ox, whose nourishment contains principally potassa salts, gives a bile rich in soda, with but traces of potassa.

The following examination was made, to ascertain approximately the nature of the bile of *Emys*, with respect to this question, the amount of material at command being insufficient for a more particular analysis.

Emys Geographica (Female).—Susquehanna (fresh water) terrapin; weight, 9 1-4 pounds, before boiling. The gall-

bladder could not be weighed at once on opening the animal, but was of the size of an average malaga grape, and left a residue which, when dried at 100° c., weighed 0.6 grammes, and was of a deep yellowish-brown color, and of taste sweet astringent. In strong alcohol the dry residue partly dissolves to a yellowish fluid, of neutral reaction. An equal volume of ether caused but a slight precipitate from this solution; a portion of the clear ethereal liquid evaporated and examined by Pettendoffer's bile test gave the characteristic violet color. The ethereal liquid, together with the precipitate floating in it, after evaporation, was reduced to ash, of which it gave 0.033, or 5.5 per cent. for the dry gall. The ash was white, and fused to a transparent drop, effervescing with acid when cold. Chloride of platinum gave an abundant potassa precipitate, the liquid of which, after evaporation on the microscope slide, gave evidence of a considerable amount of soda, by Smith's test, although the potassa undoubtedly predominated.

Emys Insculpta (Female).—This is the salt water terrapin, esteemed so great a delicacy, and of which so much is eaten in Philadelphia in the Winter season. Neither the bile nor the animal which had been boiled could be weighed. The upper shell measured six inches in length. The gall, which was about half an inch in diameter in its thickest part, and gave, dried at 100° c., 0.103 of green residue, which, dissolved in alcohol, with green color and neutral reaction, gave the same reactions to ether and Pettendoffer's test as the last example. The ash was of the same nature; it weighed 0.0065, corresponding to 6.3 per cent. of the dried residue, and appeared to have potassa and soda in the same proportions as the last.

It seems therefore that the bile of *Emys* contains both potassa and soda salts, the former predominating. It is hardly necessary to say that the animals examined were in a state of hibernation, in which state only it is customary to employ them for food.

PART III.—PROCEEDINGS OF SOCIETIES.

NEW YORK ACADEMY OF MEDICINE.

June 6th, 1855 : After the proceedings of the last meeting had been read, and the usual business transacted,—

Reports of special committees being called for, the chairman of the committee on Dr. Green's Paper, concerning Injection of the Bronchial Tubes, stated that they were ready to report.

Leave being given, Dr. WILLARD PARKER proceeded to say that the committee had a meeting soon after their appointment, and elected Dr. STONE secretary of the committee. Rules were laid down for their guidance, several sessions were held, and of all, minutes were kept. It is on these Minutes that the Report is based. Is it not better that the Minutes should be read to the Academy, and the Report afterwards ?

On motion, it was voted that they be read by Dr. STONE.

MINUTES OF THE COMMITTEE.

Dr. Horace Green, in a paper on Diseases of the Air Passages, read before the Academy of Medicine, in December, 1854, advocated among other things the introduction of gum elastic tubes into the trachea, and injections of a solution of the nitrate of silver into the lungs.

The President of the Academy, Dr. Jos. M. Smith, appointed the following committee "to inquire into and examine" the proposed treatment :—Drs. W. Parker, A. Stevens, Isaac Wood, B. F. Barker, John O. Stone, J. T. Metcalfe, Jas. Anderson.

Jan. 8th, 1855 : The committee were summoned by the call of their chairman. Present :—Drs. Parker, Stevens, Wood, Anderson, Barker, Metcalfe, Stone. Dr. Stone was chosen secretary.

It was concluded after some general discussion of the subject that the committee should endeavor—1st, to settle the question of the passage of the tube into the trachea ; and 2d, as far as possible, to ascertain the utility of the injections of the nitrate of silver into the lungs.

Dr. Barker then informed the committee that he was requested by

Dr. Green to invite the committee to visit his office any time, after two days' notice, to witness his treatment.

The invitation was accepted, and Dr. Barker requested to inform Dr. Green that the committee would assemble at his office on the following Saturday, the 13th of January, at 11 o'clock. The committee then adjourned.

Saturday, Jan. 13th : The committee met at Dr. Green's as agreed. All were present, but Drs. Parker and Metcalfe did not arrive until after a number of patients had been examined.

1st Patient.—Mrs. Crumpt. In this case it was proposed to show the passage of the probang. The epiglottis distinctly visible, preternaturally red. The patient was a young woman in apparently good health, but voice had failed for a number of years. Her voice was found to break in singing the low notes. She had put herself under Dr. Green's treatment for hoarseness, and says she is better now than she has been for four years; has pursued the treatment for five or six months.

The instrument was passed with much facility, but could not be distinctly seen by the spectators,—very slight cough was occasioned, and only slight strangulation, consequently the operation cannot be regarded as satisfactory.

2d Patient.—Mrs. Selden,—has no children, catamenia regular, no consumption in her family. Had great pain in her chest, before she came to Dr. Green. Something seemed to form in the throat, which was followed by expectoration, tinged with blood. The cough and expectoration were greatest mornings; the sputa yellow, and mixed with blood. Dr. Green had removed the tonsils. The left sub-tonsillary fossa could be seen ulcerated: Dr. Green regards this symptom as an indication that the left (the corresponding lung) is diseased. Nothing *marked* on percussion or auscultation, but perhaps there may be a shade of dulness under the left clavicle, and also a little diminished respiration on this side.

Patient says she is much improved by the treatment, has very slight expectoration, *not* tinged with blood, nor is it so thick as it formerly was; thinks she has gained twenty pounds in four months. Has been under treatment six weeks.

On passing the probang, no cough, spasm, or suffocation, was produced. On withdrawing it, it was arrested, and Dr. Green directed attention to this fact as an indication of its being embraced by the *vocal chords*. According to the patient's confession, the instrument never excited pain or cough. The course the instrument took could

not be seen, consequently, judging from the symptoms, was not satisfactory.

3d Patient.—Mr. Moore,—not regarded as tubercular. Has been affected with chronic bronchitis for a year last September; never raised blood; has been two to three months under treatment. His flesh has increased within a year. The tonsils and uvula had been removed by Dr. Green. Epiglottis visible, and rather redder than natural.

The tube was passed with a bent wire in it, so as to give it a very slight curvature, and an injection of a solution of the nitrate of silver of the strength of 35 grains to the ounce, was thrown in.

The tube was withdrawn, and another passed with a bladder fastened to its outer extremity. The air was drawn from the bladder, but it was not inflated again by the patient.

In the first operation, the tube may have been successfully passed, but nothing in the symptoms proved its positive presence in the trachea; the second operation with the bladder was unsatisfactory.

4th Patient.—Mr. Crocker,—subject to epilepsy; epiglottis just visible; the tube was passed with the bladder attached. Dr. Stone passed his finger into the mouth and felt the epiglottis and tube, and to him it seemed as if the tube had entered the trachea. Dr. Parker, on making a similar examination, was of a different opinion. Dr. Metcalfe also, on examination with the finger, supposed it to have gone down the œsophagus. The symptoms manifested by the patient confirmed their opinion, for he breathed easily and did not seem to suffer at all. Trial unsatisfactory.

5th Patient.—John Brimmer, aged 35; tubercular; says that at one time he vomited a gallon of blood. The tube was passed without suffocative symptoms, and the nitrate of silver injected. On withdrawing the tube, every drop of the solution was found to be sucked from it. Only a slight cough was caused, and a sensation of warmth excited, the patient says, in the left thorax. He does not taste the solution in his mouth, immediately after it is given, nor even after some time, hours, have elapsed. Dr. Metcalfe designedly passed the tube into the œsophagus, and the patient declared it to be in a different place from what it was when passed by Dr. Green.

6th Patient.—E. W. Butler, an epileptic, discolored with the nitrate of silver, which he had taken some years ago for his fits, when he had left the supervision of the physician who had prescribed it. He applied to Dr. Green for these convulsions, and thought himself benefitted by the treatment with the probang.

The tube was passed, and he was seized with a slight epileptic fit. The tube was at once withdrawn. He soon recovered from the attack.

7th Patient.—Robert Lathrop has never spit blood. On the 1st of September raised pus. Last Winter and this Winter has gained flesh, having lost flesh during the Summer. Has gained more this Winter than he did last, in amount about four pounds. There was diminished respiration at apex of right lung.

Dr. Green introduced the tube with the intention of entering the right bronchus. The injection of the nitrate of silver was given. The patient says he feels the injection in the right lung, first a cold, and then a warm sensation. The matter raised after the injection, the patient says, has the taste of nitrate of silver. The committee did not consider the experiment in this case satisfactory.

8th Patient.—Stillwagon. The probang and tube were both passed. The first caused great irritation, the second very slight. The injection was perfectly sucked from the tube.

The committee then adjourned to meet at Bellevue Hospital on the following Saturday, Jan. 20th, to witness some further experiments, under the care of Dr. Isaac Taylor. Dr. Green was invited to be present at the same time.

Saturday, Jan. 20th, 1855 : The committee met, as agreed upon, at Bellevue Hospital. Present :—Drs. Parker, Barker, Anderson, and Stone. Drs. Stevens, Wood, and Metcalfe were absent. Drs. Taylor, Green, Douglas, and Peaslee, were also present, besides a large number of other medical gentlemen.

Dr. Green, on being informed that the patients now to be exhibited had never been subjected to any preparatory treatment, and, with few exceptions, had never had caustic applied to their throats by means of the probang, stated that he feared that the experiments would fail. In his own practice he always considers it essential to success, to have the probang, with caustic, used daily to the throat for at least a week, before any attempt was made to introduce the tube or probang into the trachea.

9th Patient.—Bryan Turpin has a cavity in the left lung. No applications to the throat had been made previously, but an attempt had been made to introduce the tube. The object of the experiment especially was to ascertain how much the patient could breathe, and how well articulate, when the tube had been passed through the vocal chords.

Dr. Green was the operator. The tube seemed to catch against the vocal chords. There was great spasm and seizing of the instrument by the patient, and great cough afterwards. The patient became alarmed, and desired to be allowed to go. He was persuaded to have another trial made. The instrument caught again, apparently against the vocal chords. In this second experiment there was no spasm, but some cough afterwards.

10th Patient.—Larkinson. Epiglottis just visible ; no application had been made to the throat previous to the experiment. Dr. Green introduced the tube ; when in, the patient spoke distinctly, and said that it did not hurt him. There was some cough and disposition to vomit ; great cough afterwards. Dr. Green, in order to remove some doubts which were expressed, of the tube being in the trachea, proposed to pass one probang into the larynx and another into the œsophagus. Cough was produced on moving the one (said to be) in the œsophagus up and down, no motion was communicated to the other. Dr. Green regarded this experiment as proof that both probangs were not in the œsophagus. Dr. Parker stated that he was not satisfied with the experiment, on account of the absence of appropriate symptoms.

11th Patient.—Mary Norton, has no disease of the lungs, but is a strong and healthy young woman, a servant in the Hospital. She had been experimented on before by Drs. Parker and Taylor, who felt satisfied that they had succeeded in passing the *tube* into the trachea. The patient readily volunteered herself for the new experiment. Dr. Green passed the tube. Some effort to vomit was created ; could articulate indistinctly, but could not breathe through the tube. On withdrawing the instrument she said it went into her stomach. On a second trial by Dr. Green, she shook her head, to indicate that it was not in her lungs, and finally ejected (vomited) through the tube. Much cough was produced.

Dr. Taylor bent the tube so as to form a curve of a circle of some five or six inches diameter, and then introduced it. The symptoms were in striking contrast to those which were produced in the other experiments. There was great cough and spasm, and reddened face, in fact all the symptoms of impending suffocation. A full current of air was sent through the tube, and a candle was blown out readily ; on being encouraged to speak, she said, "*yes sir,*" in a hoarse whisper. Dr. Green uses his tubes but very slightly bent at the point.

12th Patient.—Stephen Tompkins, tubercular, no applications had been made before. Dr. Green passed the tube ; no cough or much

struggling produced. Dr. Green supposed it to have entered the œsophagus. On a second trial with the tube, it was arrested momentarily, but advanced again on pressure. Dr. Green interpreted this arrest to signify its passage through the vocal chords. Dr. Parker then intentionally passed a probang into the œsophagus, and a second one afterwards, but beyond the first. On withdrawing the last, the first was drawn up also. On introducing both probangs, one after another, into the œsophagus, and passing the second one up and down, the first one held its place. Dr. Barker did not assent to this, and desired to have it recorded that he was of the contrary opinion. No objections were made by the other members of the committee.

13th Patient.—James Kerr, has had nitrate of silver applications to the throat. The object of the experiment was to see, when the probang is introduced into the larynx, how much the patient could breathe: the probang was introduced by Dr. Green. The patient said it had passed into the lungs. Dr. Parker then passed it into the œsophagus, but the patient could not speak.

The *curved tube* was then taken by Dr. Green, but he did not succeed in making it enter the larynx. Dr. Douglas then made an attempt, the tube entered the glottis, and immediately came away of itself.

14th Patient.—John Wiley, a large and courageous man, with a capacious throat. The epiglottis visible; has had no applications to the throat before. Dr. Green passed the tube. There was no cough or struggle. Dr. Taylor then used the curved tube: *great spasm and cough, with livid redness of the face*, was caused. The patient could speak his name, but it was in a *croupy and suppressed whisper*. *He breathed huskily, and could blow out a candle readily.*

The tube was then passed into the œsophagus, in order to show that the blowing out of a candle is no proof that the tube is in the trachea,—there was no struggling or effort made to vomit. This experiment did not succeed.

15th Patient.—John Grindle. The epiglottis could be seen and touched readily with the finger. Dr. Stone, having placed the tip of the index finger of the left hand upon the epiglottis, passed the curved tube into the trachea. *Great cough and suffusion of the face* was produced. The patient could *not speak*. The patient withdrew it himself. Dr. Stone then attempted to pass the tube without the wire, but it went into the œsophagus. Dr. Green then passed it into the œsophagus; the patient *could speak but very indistinctly, but not in a husky voice.*

Saturday, Jan. 27th, 1855. The committee met again at Bellevue Hospital, for the purpose of making new experiments, but especially to ascertain if the tube could be passed with more ease and more frequently, and with less violent symptoms, in patients who had been subjected previously to frequent topical applications of the nitrate of silver to the throat.

It may be remembered that, at the last meeting of the committee, Dr. Green had objected to the patients, because they had not been prepared beforehand, and stated that he considered previous preparation necessary to success in passing the tube.

Each patient to be to-day exhibited, had, since the last meeting, as many as three to five applications made to the throat, under Dr. Taylor's superintendence.

The committee present were Drs. Parker, Barker, and Stone. Drs. Green, Douglas, Taylor, Cock, Peaslee, Glück, and many other medical gentlemen, not including a large number of students, were also present.

Dr. Green mentioned that in recent experiments, since the last meeting of the committee, he had succeeded best in passing the tube in new patients, when the tube had a large curve given to it, as used by Dr. Taylor.

16th Patient.—Michael Gorman. Dr. Green used the tube *slightly* bent, and endeavored to pass it. The patient vomited, but none of the fluid came through the tube. Several trials were made, all of which caused vomiting.

17th Patient.—John Burns. The patient was excited, and all attempts failed, from his want of courage.

18th Patient.—James Martin. Dr. Green passed the tube; it went into the œsophagus; the patient was timid, and indisposed to have any attempt made.

These patients were nervous and timid, the vomiting of the first one excited the rest, and upon the entrance of the tube into the mouth they gagged and became unmanageable. Dr. Green regarded them as unprepared for the experiment, for, as he said, his own private patients never acted in this manner, nor did their throats, after previous preparation, manifest such irritability.

19th Patient.—Stephen Tompkins, experimented upon at the last meeting of the committee. The tube was passed by Dr. Green. The patient could not blow through the tube; it passed into the œsophagus. On a second trial it also passed into the œsophagus.

20th Patient.—John Wiley. Dr. Green passed the tube, more

curved than in his usual experiments. The candle was blown out. The patient vomited while the tube was being introduced and while it was in, but none of the fluid ejected seemed to come through the tube. In this case there was no spasm or suffusion of the face.

21st Patient.—Charles Singleman. Epiglottis visible. Dr. Green passed the tube. The patient vomited through the tube. On the second trial, great gagging, and finally vomiting through the tube.

On the first trial the tube was supposed by Dr. Green to be in the trachea, until the patient vomited, and thus showed that it was in the œsophagus.

22d Patient.—Anthony Annikin vomited on depressing the tongue. On a second trial with the probang, vomited. There was no proof to the spectators that it was in the trachea, although Dr. Green was of this opinion. On a third trial, vomited on depressing the tongue; on a fourth trial, ditto.

23d Patient.—Patrick Larkin. Dr. Green passed the tube. On first trial, it went into the œsophagus. On second trial, it was doubtful; the holes in the tube became blocked with mucus. The patient could not speak. Dr. Green thought it had passed into the larynx.

24th Patient.—Martin Coyne. On first trial, he pulled out the tube. On second trial, he spoke his name. Apparently it was in the œsophagus. On third trial, vomited through the tube, with much struggling.

25th Patient.—Isaac Griffin,—very deaf man. Dr. Taylor mentioned that this man was affected with secondary syphilis and tubercles, and that he had succeeded in passing the curved tube into the trachea, but on withdrawing it, it had assumed a double (sigmoid) curvature. On first trial with curved tube, Dr. Taylor entered the œsophagus. Dr. Stone then felt for the epiglottis with the left index finger, and passed the curved tube into the trachea. There was no spasm, and the patient breathed freely through the tube. The success of the experiment was admitted by all. A solution of the nitrate of silver was then thrown in without any spasm. It is proper to mention that this patient was in a very feeble condition when this experiment was tried. This fact may perhaps in a measure account for the little distress caused in the passage of the tube. The syphilitic affection of the trachea undoubtedly contributed also to render the parts insensible.

After the committee adjourned, this patient was visited in the ward by Drs. Parker and Stone. He was made to hear, by applying a flexible stethoscope to the ear. He said he felt worse since the ex-

periment was made. He was much agitated. His sphincters had become relaxed, and he had defecated in his clothes. The cutaneous circulation was impeded, and he was enfeebled and exhausted.

26th Patient.—James McCormick. Epiglottis seen to be thickened. The pharynx red and irritable. Dr. Green tried the tube *slightly* bent. The first trial failed; on second attempt the tube seemed to have entered the glottis, but was pulled out by the patient.

27th Patient.—John Henry,—resisted, and pulled away the tube. The experiment failed.

28th Patient.—John Logue,—has had the nitrate of silver applied to the throat four times previously. On first trial, the patient resisted. Dr. Stone then took the tube, much curved, and feeling for the epiglottis with his finger, passed the tube into the larynx. The patient breathed through the tube. *The face became suffused, and there was great spasm and threatening suffocation*, so that it was withdrawn almost immediately after its introduction.

29th Patient.—Mary Norton, the servant maid who volunteered last Saturday for the experiment, and in whom the tube was successfully passed into the trachea, to every one's satisfaction, came forward again, for a new trial. Dr. Green passed the tube bent, as usual with him, a *very little*, and successfully introduced it into the larynx. There was *great spasm, redness of the face, and cough*, and although she has now had the tube passed several times there was no diminution of the symptoms of suffocation. *She breathed through the tube with a full current. Speaks her name when told to do so in a husky and almost inaudible whisper.* Dr. Stone afterward designedly passed the tube into the *œsophagus*, and the patient, when told to speak, said, in a loud voice, "*it is in the stomach.*"

This experiment showed that the tube, slightly bent at the point, can be passed into the trachea. Dr. Green claims an equal success with all his patients. In all the successful cases, *i. e.*, when the tube passed to the satisfaction of all into the trachea, there was *great spasm, with the exception of the deaf man.*

The committee agreed to meet on the following Thursday, at 1 o'clock, at Dr. Green's office, to witness his success with patients that had been prepared for the experiment under his own supervision.

The committee then adjourned.

Thursday, Feb. 1st, 1855: The committee met as agreed upon at the previous meeting, at Dr. Green's office. Present:—Drs. Parker, Stevens, Barker, Anderson, Wood, and Stone. Dr. Metcalfe was

absent. Besides these, there were present, Drs. Green, Douglas, Glück, &c.

At the previous meeting Dr. Green had objected to the patients as imperfectly prepared for the experiments ; that the application of the nitrate of silver to their throats had not been made with sufficient frequency, and consequently the patients resisted and rendered it impossible to pass the tube when only *slightly bent* at the point. He promised us a greater success in his own patients, and the chief object of the present meeting was to witness his success.

30th Patient.—Messmore,—has been at various times for the last nine months under treatment. Once a week, or every two weeks, had come to Dr. Green's. An abscess had formed in the right tonsil, which had been followed by fistula, through which pus could be squeezed. The tonsil had been removed by Dr. Green at several operations, and latterly the fistula had been laid open with the knife. Pus can be made to exude from the tonsil on pressure. The patient has never had cough. His family have been long lived ; none of them tubercular ; and his own health is apparently good. His digestion is generally good, but in his wanderings had been compelled to live on unsuitable food, and then his digestion has suffered. The patient is interested in his case, talks much about it, and has made it an especial study. Has even dissected the dead body for information, and thinks he can tell by the difference of the sensations produced, whether the tube passes into the trachea or œsophagus, and also can tell by his sensations, that the injections of the nitrate of silver pass into the ramifications of the bronchia.

The epiglottis is visible on depressing the tongue, and the tube can be seen to enter the glottis. The tube was passed without much struggling, and air was freely expelled through the tube. An injection of two to three drachms of a solution of the nitrate of silver of the strength of thirty to forty grains to the ounce, was then thrown in. All present were satisfied, I believe, that the experiment was successful. The patient, a few minutes afterward, coughed up the injection, or rather, what he raised had the taste of the nitrate of silver.

31st Patient.—Mr. Crocker, an epileptic. On first trial by Dr. Green, the patient spoke and said it was not in the trachea. On second trial, the patient spoke distinctly, consequently the tube was believed to be in the œsophagus. On the third trial, Dr. Stone, with a finger on the epiglottis, passed the curved tube into the trachea. The patient *could not vomit* ; there was great *suffusion of the face* and

spasm, which, after a little while, became allayed ; *air was driven in a full current through the tube*. It was conceded that the tube was fairly in the trachea. The injection with the nitrate of silver was not given. On withdrawing the tube, there was much irritative cough, and Dr. Green said that he would allay it by passing a probang with the sponge dipped in nitrate of silver into the glottis. This was done and success followed the experiment. This patient had presented himself to the committee at the previous meeting at Dr. Green's. Dr. Green repeated his statement that the curved tube could be passed with greater ease in new and unprepared patients, but that the tube slightly bent could be passed with equal facility in those who had been properly prepared.

32d Patient.—Mr. Stillman has had the injections of the nitrate of silver fifteen or twenty times. Usually feels no sensation afterward, except when the stomach is empty, when there is slight nausea. He thinks he can tell whether the tube is in the trachea or œsophagus. Has had severe bronchial troubles, but no tubercles have been discovered. Did have some night sweats until he came under Dr. Green's care, but never to any great extent. Has raised some discolored sputa, tinged with blood, but no blood since he has been under Dr. Green's care. Raises about two ounces of sputa daily, which is an increase, compared with what there was formerly. Has gained five and a half pounds of flesh.

The tube, *more than usually curved*, was passed by Dr. Green,—great spasm was caused, and the tube was withdrawn by the patient. After the lapse of a considerable period of time, during which the committee were engaged in examining other patients, Mr. Stillman was tried again. He objected to the curved tube as causing unusual suffocation.

Dr. Stone passed the tube without the wire, and the patient expelled air through the tube, but very slightly, and not in a full current. It was believed to be in the œsophagus.

The patient was excited, like some of the others, by the presence of so many spectators, and the failure of the experiment was attributed by Dr. Green to this unusual circumstance.

33d Patient.—Dr. Pulling. The tube was passed by Dr. Green. The patient could not say, positively, whether it was in the œsophagus or trachea. It was probably in the œsophagus. After the lapse of a little time, Dr. Pulling consented to allow Dr. Stone to try the curved tube while his finger was upon the epiglottis. The epiglottis

could be reached with difficulty, and only occasionally. The experiment was a failure ; the instrument passed into the œsophagus.

34th Patient.—Robert Lathrop,—was experimented upon at a previous meeting of the committee, when, although the injection was given, the committee did not consider the experiment satisfactory. To-day Dr. Green fairly passed the tube, to the satisfaction of all, into the trachea. The injection was thrown in. *Throughout, the spasm and cough were great.*

The patient said the effect *was different from that usually produced, the cough greater, and the sensation after the injection was higher up in the chest on the right side.* To explain this last symptom, it was mentioned that the tube had not been introduced so far as usual.

The committee consulted together, and after having received an invitation from Dr. Green to call singly at his office and examine his practice, adjourned.

March 23d, 1855 : The committee were called together by their chairman, and met at Dr. Stone's. Present :—Drs. Parker, Wood, Metcalfe, and Stone. Dr. Anderson was absent ; so were Drs. Stevens and Barker, who were out of town. The notes of the experiments made at the different sessions of the committee, were read, and much discussion followed. The chairman was anxious to gather the opinions of his associates, in order to be aided in making his final report.

It was concluded that the tube could be passed into the trachea, but in order to decide when this was successfully done, there was *nothing to guide us but the symptoms manifested. These were cough, livid redness of the face, strangulation, husky voice, croupy whisper, and breathing through the tube in a full current.*

June 5th, 1855 : The committee met at Bellevue Hospital. Present :—Drs. Parker, Anderson, Barker, Wood, and Stone, of the committee. Drs. Taylor, Smith, Gourley, and four others, of the hospital, were also present. Dr. Metcalfe came in during the second experiment.

35th Patient. Elizabeth Peastor, aged 25. Diminished respiration, with prolonged expiration on right side. Cough ever since last summer. Phthisis in early stage ; no cavity. No instrument used before. Epiglottis visible on depressing tongue with spatula. Pale.

Probang passed by Dr. Taylor. Breathed easily ; no suffusion of face or redness of any kind. Some sickness, but no vomiting. Instrument kept in for five minutes. Respiration a little embarrassed at first, but became calm and regular ; could speak indistinctly, but not croupy. The *curved* tube, a quarter of an inch diameter, taken, in order to see if there is difference of symptoms manifested. Instrument moderately curved, with wire in. Dr Taylor operator—index finger in mouth to guide point—instrument caught in glottis, causing some suffusion of face and lachrymation, but it passed immediately over into the œsophagus. The symptoms of suffocation were intense, red and livid face, struggling, great cough afterward, and patient avows that the tube was in a very different place than where the first was. (The probangs were obtained at Dr. Green's.)

36th Patient.—Melvira Mosier, aged 24 ; slight cough two months. No disease of lungs discoverable ; patient affected with primary syphilis. Epiglottis visible on depressing tongue. Dr. Taylor attempted to pass Dr. Green's probang. A little cough on its passage, and some effort to vomit. No suffocation. It passed into the œsophagus. A curved probang was next used, to show that it could be passed, and that the symptoms indicated clearly when it had been successfully done. 1st attempt did not succeed. 2d attempt, Dr. Stone tried with his finger on epiglottis ; it seemed to catch in the glottis, causing suffocation, and seemed then to slip into œsophagus. The sponge was acknowledged to be too large. 3d, trial with curved tube. It just entered, and then stopped. 4th trial, curved tube not successful. 5th, the probang bent over a lamp to produce a large curve. No suffocation caused ; breathed easily ; it evidently passed into the œsophagus. 6th, tried curved tube again. It passed into œsophagus. We infer this much from absence of suffocative symptoms. No applications had been made to throat before.

37th Patient.—Catherine Philips, aged 24. The tube introduced on June 3d into the trachea, by Dr. Taylor. No cough or diseased lungs. Primary syphilis. Epiglottis visible on depressing the tongue. Dr. Stone made two attempts with Dr. Green's probang, both times it passed into the œsophagus. The epiglottis could not be reached with the finger. Vomiting was caused in withdrawing the instrument. Dr. Taylor tried the curved probang. It passed

into the œsophagus. Dr. Barker tried with spatula on the tongue with Green's probang. His object was, to pass the instrument rapidly, and thus surprise the epiglottis, as it were—failed. Dr. Barker tried again, with slightly curved tube. She bore it well for a time. Ejected air through the tube, and from this circumstance, although there was no suffusion of face or suffocation, some thought it was in the trachea. She finally vomited, which proved this supposition to be incorrect. Dr. Barker admitted it to be in the œsophagus. Dr. Taylor then tried with curved, and from redness of face, rapid movement of body and limbs, and inability to breathe, there was no doubt that it was in the trachea.

38th Patient.—Mary Hewitt, aged 22. No cough. Curved probang by Dr. Taylor; it passed into the œsophagus. Tried again, and from livid color and partial asphyxia, it was undoubtedly in the larynx. It entered glottis, but could not be passed, from spasm, etc. It had entered the glottis. One application before to-day had been made to the throat.

Catherine Philips,—the patient before last, tried with curved probang by Dr. Parker, finger on epiglottis, instrument rested for a moment, and slipped into the œsophagus, causing vomiting.

Minutes read, and after some conversation, adjourned.

JOHN O. STONE, M.D., *Secretary.*

Dr. WILLARD PARKER then proceeded to read his Report, which was stated to be the Report of the Committee :—

MAJORITY REPORT.

The committee to whom was referred the Paper of Dr. HORACE GREEN "On the Employment of Injections into the Bronchial Tubes and Tubercular Cavities of the Lungs," beg leave to report,—

That they have given this subject that serious attention which its importance demands, and respectfully submit to the Academy the result of their investigations.

At the preliminary meeting of the committee, held on the 8th of January, it was determined,—

1st. To settle the question of the passage of the Instrument into the Air Passages.

2d. To ascertain, as far as possible, the utility of Injections of Nitrate of Silver into these passages.

The committee met on five different occasions. Twice, viz : on the 13th of January and on the 1st of February, at the office of Prof. Green ; and three times, viz : on the 20th and 27th of January, and on the 5th of June, at Bellevue Hospital. At these different meetings thirty-eight patients in the aggregate were submitted by Dr. Green and others to the test of the operation of passing instruments into the air passages, and then of the injection of nitrate of silver into these air passages.

The details of these experiments will be found appended to this Report, of which they are the basis.

1st. As to the practicability of the operation of passing Instruments into the Air Passages.

This division of the Report may be considered under the following heads :

1st. *The History of Catheterization of the Air Passages.*

2d. *The Results of Experiments with Instruments.*

3d. *The Facility with which the Operation may be Performed.*

The History of Catheterization of the Air Passages.

The introduction of tubes into the air passages is by no means a recent operation. It was recommended by Hippocrates in severe angina, where suffocation was impending, and seems to have been long practiced, in preference to bronchotomy.

Dessault, among modern writers, also recommends it strongly. Mr. Ryland, in his Treatise on Diseases of the Larynx, devotes a short section to this operation, and discusses familiarly its practicability and utility. Other authors, whom we need not mention, allude to it as a matter of history.

Results of Experiments.

The results of the series of experiments, instituted by your committee, confirm the records of history, as to the practicability of the operation of Catheterizing the Air Passages. In eleven cases it was

performed to their entire satisfaction. The evidences on which they rely as proofs of its success, are,—

1st. The detection of the tube in the cavity of the larynx, by the finger passed into the mouth. This was done in some cases by several of the committee, and was demonstrative of the position of the tube in relation to the laryngeal opening.

2d. The symptoms manifested by the patient. The symptoms which mark the entrance of the instrument into the larynx, and its progress along the air passages, are unequivocal, and need to be witnessed in but a single instance to be recognized at once in every subsequent trial. They are, indeed, such as we ordinarily witness when foreign bodies enter these passages, and reasoning *a priori*, such as we would naturally expect would be present. The instant that the tube enters the larynx, the patient is seized with a violent spasmodic cough, the face becomes red and anxious, and the patient manifests an eager disposition to withdraw the instrument, or escape from the hands of the operator. While the tube enters the rima glottidis these symptoms reach the maximum of their intensity; from being suffused and anxious, the face becomes swollen and livid; the veins of the neck and face become turgid; the eyes wild, prominent, and overflowing with tears; the respiration, for the moment interrupted, is renewed with long, loud, and croupy inspirations and expirations, attended with violent spasmodic cough and forcible ejections of bronchial mucus from the tube. So overpowering is the sense of suffocation at this moment, that the patient is with difficulty persuaded to allow the tube to remain, or that his attention is diverted to other objects. If by assurance that the operation is complete, and that his sufferings will not be increased by the presence of the instrument in his throat, he can be quieted, the cough and sense of suffocation in some measure subside, and an opportunity is offered of testing the powers of speech. In every instance where the patient was induced to attempt to speak under these circumstances, the only voice emitted was a hoarse, croupy sound, which could with difficulty be construed into the simple words "yes" or "no."

In striking contrast was the train of symptoms developed on passing the instrument into the œsophagus. Retching and cough usually followed its first introduction into the fauces, and as it penetrated more deeply, vomiting sometimes occurred. There was little or no anxiety manifested, no dyspnœa, and the voice, frequently hoarse and distinct, was often quite natural. The patient soon became quiet and composed, and allowed the experiment to be indefinitely prolonged.

The symptoms which distinguish the passage of an instrument into the trachea and œsophagus, may thus be contrasted :—

TRACHEA.	ŒSOPHAGUS.
1st. Suffusion of the face, rapidly increasing to turgescence and lividity.	1st. Suffusion of the face slightly, rapidly subsiding, with cessation of retching and cough.
2nd. Great anxiety and alarm, not easily pacified.	2nd. Little anxiety, easily pacified.
3rd. Eyes wild, staring and overflowing with tears.	3rd. Eyes natural, slight suffusion from tears.
4th. Cough violent and spasmodic.	4th. Little or no cough.
5th. Respiration greatly disturbed ; inspiration loud, hoarse and stridulous, expiration attended with violent cough, like that of laryngeal phthisis, ejection of bronchial mucus through the tube, and finally free breathing through the tube.	5th. Respiration little if at all disturbed.
6th. Voice extinguished ; a hoarse whisper, interpreted with difficulty.	6th. Voice distinct, often quite natural.
7th. Retching slight.	7th. Retching and vomiting a common symptom.

So prominent and characteristic are the symptoms which the patient manifests on the successful introduction of the instrument into the air passages, and so strikingly do they contrast with those witnessed when it enters the œsophagus, that your committee came to regard the rational signs as the surest criterion of the success of the operation. In but a single well marked instance did they fail of being exhibited with characteristic intensity. In this case the patient had suffered from a syphilitic ulceration of the air passages, and to this circumstance, together with the enfeebled condition, we may attribute the absence of severe symptoms. Dyspnœa and lividity of the face, were the only evidence of the success of the operation. In case 30 (Messmore), the characteristic symptoms were also less marked.

We would therefore establish it as a rule, to which ordinarily there are no exceptions, that the rational signs, above tabulated, will differentially distinguish the course which the instrument takes, whether into the laryngeal or œsophageal passages.

Other tests than those above enumerated were employed to prove the practicability of this operation, but none of them were found on trial free from objection.

The power of the patient to blow out a lighted candle, and to collapse and inflate at will in respiration, a bladder attached, to its free extremity, through the tube, has been much relied upon as a proof that the tube had entered the trachea. But it was found that when

the tube was purposely passed into the œsophagus, the same effects were still produced, though in a much less degree.

The passage of two sponge-armed probangs into the throat, and by the withdrawal of the lower, and calculating the position of the other, whether in the œsophagus or trachea, did not, as far as experimented with, yield satisfactory results ; for it was not proved to the satisfaction of the committee, that the sponge probang entered the larynx and trachea.

The sensations of the patient are reliable only where the tube has been repeatedly passed both into the trachea and œsophagus. In these cases patients have very promptly and correctly decided which passage the instrument was entering. This fact was strikingly illustrated in case 11 (patient, Mary Norton), on whom the operation was repeatedly performed, before she was brought before the committee.

On the first and second trials by Dr. Green of the introduction of the tube, she shook her head, indicating that it had not entered the larynx. The operator was satisfied, however, on the last trial, that the tube had penetrated the trachea, and that the sensations of the patient were not to be relied on, when she ejected a portion of the contents of the stomach through the tube, and thus demonstrated not only the position of the instrument, but equally the correctness of her sensation.

It appeared very evidently, also, in the course of these experiments, that the opinion of the operator, as to the course which the instrument takes, is unreliable, when he trusts to his own senses, and disregards symptoms. We witnessed in cases 11 and 21, the fallacy of Dr. Green's opinion, as to the success of his experiments, though based on so large an experience. In both instances, while positive that he had successfully passed the instrument into the trachea, the patients vomited through the tube, and thus demonstrated his error. But little less demonstrative of the same fact, was the frequent assertion of Dr. Green, on first passing the instrument, that it had entered the trachea, and his subsequent doubts, and admissions of failure, on a close examination of the case.

The Facility of the Operation.

While these experiments proved conclusively to the mind of your committee the practicability of passing tubes into the air passages, they also afforded opportunity of witnessing the facility with which

the operation is performed under different circumstances and with different instruments. These we shall consider—

1st. As regards the previous preparation of the patient.

2d. As regards the Instruments employed.

Previous Preparation of the Patient.

It is contended that the facility with which the instrument is introduced, depends much upon the previous preparation of the patient, by the frequent applications of the nitrate of silver to the upper parts of the larynx. To obviate this objection, the committee met twice at Dr. Green's office, to witness the experiment upon patients whom he was treating with local applications to these parts,—and at the second visit at Bellevue Hospital, the patients were selected from a class which had been expressly prepared for the experiment by application of caustic to the throat from three to five times during the preceding week.

The results of these experiments, however, do not sustain the above assertion. The patients on whom Dr. Green had been operating for six months more or less, were as intolerant of the actual passage of the instrument into the trachea, as those first submitted to the trial, with the exception of Messmore. The case of Mary Norton (case 11) is in point. Although the tube in her case had been passed into the trachea half a dozen times previously to her coming before the committee, still she exhibited, in the most marked manner, all the evidences characteristic of the introduction of a foreign body into the air passages, when the tube was successfully passed. It should be stated that in the case of Messmore (case 30), who had been long under treatment, the presence of the tube was better tolerated.

Instruments Employed.

The facility with which catheterism of the air passages is performed, seems to depend in a great degree upon the instrument used; and these we now propose to consider.

The instruments employed in these experiments, were,—

1st. A tube, consisting of Hutchings' catheter (No. 10), with a wire stilet, and bent with a curvature corresponding to a circle of six inches in diameter.

2d. A tube of the same size, slightly bent at its extremity. This was the instrument selected by Prof. Green, and is the one he is accustomed to use in practice.

3d. A sponge-armed probang, the sponge having a diameter of from one-half to three-fourths of an inch.

The results of the experiments with these several instruments, was as follows :—

	<i>No of Trials.</i>	<i>Failed.</i>	<i>Succeeded.</i>	<i>Per cent. of Failures.</i>
Tube with large curve,	13	5	8	about 38
Tube with small curve,	38	35	3	about 92
Sponge Probang,	18	18	0	100

From these experiments it appeared that the instrument best adapted to succeed in catheterism of the air passages, is a tube having a large curve, or one shaped like a common catheter, while that least adapted to enter the trachea, is the sponge-armed probang. We will briefly review our experiments with these several instruments, and—

1st. *The Tube with the Large Curve.*—This instrument was introduced into the trachea seven times, to the entire satisfaction of your committee. The fact that the operators were successful seven times in nine trials, proves that this tube can be introduced with much certainty into the air passages. In operating, the tongue should be pressed forward by the finger passed over the epiglottis, and the tube passed deliberately and cautiously along the finger into the larynx. The finger is preferable to a spatula, in depressing and protruding the tongue.

2d. *The Tube with the Small Curve.*—This is the instrument selected by Prof. Green for the catheterization of the air passages, and is that which he uses in practice. In these experiments he was the only one who employed it ; and the result shows, that even in the most practiced hands it fails in entering the air passages in about 90 per cent. of the trials.

3d. *The Sponge Probang.*—This instrument afforded the least satisfactory results of any used. Notwithstanding the most persevering efforts with the whalebone slightly bent, as used by Prof. Green, and with patients who quietly submitted to the test of experiments, the results were entirely negative. In no instance did it satisfactorily enter the trachea. In two instances, with the whalebone curved like a common catheter, the sponge was thought to have entered the larynx, but with repeated efforts it could not be forced between or beyond the vocal chords. The suffocation was so great each time, as to compel a withdrawal of the instrument.

These experiments, as far as they have been carried, justify the conclusion, in the minds of your committee, that the sponge-armed

probang, with the extremity slightly curved, cannot enter the air passages, but that if the curve correspond to that of a common catheter, it may be made to enter the larynx.

The bearing which these facts have upon the assertions, "that this method of medicating the larynx and trachea is accomplished with much ease, and ordinarily with great certainty," and "that the sponge-armed probang . . . has been in a thousand instances, thrust down between and beyond the vocal chords, and has been carried not only through the trachea and bifurcations, but . . . has been passed *at will* into the right or left bronchial division," your committee leave it for the Academy to decide.

When it is observed that the tube with which Prof. Green is accustomed to throw injections into the air passages, fails of entering the trachea in 92 per cent. of the trials, it cannot fail to appear that medication of these passages by means of this instrument, is a difficult operation, and seldom crowned with success. Still more striking is the fallacy of the declaration, that the sponge probang is readily passed through and beyond the vocal chords; and frequently, and at will, passed into the right or left bronchial division, when in this series of experiments it was not once made to enter the trachea.

II. *The Utility of Injections of the Nitrate of Silver into the Air Passages.*

The practicability of introducing an injection into a tubercular cavity, involves as a necessary condition, the introduction of a tube into or near that cavity. As your committee have no evidences of the practicability of passing a tube into tubercular cavities in the lungs, they will be excused from considering, on any merely theoretical grounds, the question of the probable utility of injections into such cavities.

In three patients, injections of nitrate of silver were thrown into the air passages, two were under Prof. Green's care, and one was an inmate of Bellevue Hospital. The first two did not again come under the observation of your committee, and they cannot speak of the results. The correspondence giving a history of the last case, which terminated fatally, is as follows :—

NEW YORK, April 5th, 1855.

WM. FROTHINGHAM, M.D. :

Dear Sir, I will thank you to send me an account of the condition of Isaac Griffin, previous to the 27th of January, when the nitrate of silver was injected into the lungs, and his appearance afterwards,

up to the time of his death. Please give me an accurate account of the post mortem appearances, and anything else of interest touching the experiment in his case. I remain, your friend,

W. PARKER.

BELLEVUE HOSPITAL, April 15th, 1855.

DEAR SIR, In answer to yours of the 5th inst., requesting an account of the case of James Griffin, I send a copy of the notes which I have by me.

Jas. Griffin, aged 55, stone-mason by trade, native of Ireland, admitted Jan. 17th, 1855. Had symptoms of phthisis, for about eight months prior to admission. On physical examination, signs of tubercles in both lungs, and of a small cavity at apex of right lung, were discovered. Some suspicion of syphilis, but nothing certain made out. Has chronic inflammation of fauces, and a small ulcer upon one tonsil. Is somewhat deaf. Has neither night sweats nor diarrhœa. Pulse in the afternoon about ninety, but less frequent in the morning. Appetite tolerable. General condition rather weak, but is not confined to bed. Takes his meals at the common table, and, living in the second story, goes down to the yard to attend to the calls of nature. Has some dyspnœa, after ascending stairs. This was his condition up to the afternoon of Jan. 27th, no material change having occurred since his entrance.

On the afternoon referred to, between one and two drachms of a solution of arg. nitrate, of the strength of two scruples to the ounce, were injected into his trachea. I saw him within ten minutes of the operation. He was then endeavoring to find his way down stairs to his ward, his mind seemed much confused, and he could speak with difficulty. Being conducted to the ward, he was shortly after seen by Dr. Stone, yourself and me. He was then laboring for breath, his lips and hands livid, extremities cold, pulse 120 to 130, and thready. An involuntary evacuation of his bowels into his pantaloons had occurred.

By the application of external heat, mustard to the epigastrium, and brandy and carb. ammonia internally, reaction was established in a couple of hours.

The next morning he was too feeble to sit up, and had to be propped in bed, that being the easiest position for him. There was great dyspnœa, with a rapid weak pulse and lividity of surface.

But little could be learned by auscultation, loud bronchial râles disguising other sounds, if others existed. Death took place Jan. 28th, about 4 P. M., within twenty-six hours of the operation.

Autopsy seventeen hours after death. Abdominal viscera healthy, except liver, which was a little fatty. Heart and great vessels healthy. Fauces inflamed. Larynx and upper part of trachea healthy. About three inches down the trachea, an intense and minute injection of the vessels of the mucous membrane commenced and continued down into the minute bronchi.

Nearly all those parts exhibiting the inflammatory blush, were

obscure by an opaline appearance, similar to that observed on mucous membranes which have been washed with nitrate of silver. This faded away after an hour of exposure to the air, leaving the intense redness still more distinct.

The bronchial tubes, from their third ramification downward, were filled with a greyish white, slightly tenacious secretion, of the appearance and consistence of coagulated pus. This was not adherent to the walls of the tubes. On microscopic examination, it was found to contain pus corpuscles, in moderate quantity, granular exudation corpuscles, blood globules, epithelium and an abundance of granular matter. When the lung was held in its natural position, the tubes leading to the cavity ascended and (as well as the ascending tubes of the opposite lung) appeared to have received but little of the injected solution, and the inflammatory appearance extending up them but a short distance. The plugs of greyish matter were here co-extensive with the inflammatory blush. The cavity and adjacent tubes presented no indication of having received any of the solution.

* * * * *

I remain, sir, yours truly,

WM. FROTHINGHAM

Dr. WILLARD PARKER, 195 West Twelfth street.

Conclusion.

1st. Catheterism of the air passages dates its history from the time of Hippocrates.

2d. The best evidences of the passage of an instrument into the air passages, are the rational signs.

3d. The facility of the operation depends upon the kind of instrument used ; the tube having a large curve being best, and the sponge probang least adapted to enter the trachea.

4th. That there is no reliable evidence, in the opinion of your committee, that the *sponge probang* has been passed through and beyond the vocal chords.

5th. That there is no positive evidence that an instrument can be passed at will into the right or left bronchial divisions.

6th. That in the great majority of instances where injections are supposed to have been thrown into the lungs, through a tube, they have passed directly into the stomach.

7th. That as regards the utility of injections of nitrate of silver into the lungs, the facts thus far developed, in the experiments of your committee, lead them to regard the operation as one fraught with danger, as well as difficulty.

In submitting the above report, the committee beg leave to tender their thanks to Prof. Green, and to Isaac E. Taylor, Visiting Physician of Bellevue Hospital, who kindly aided in furnishing subjects, and in making the experiments which are appended, and which form the basis of this report.

WILLARD PARKER, M.D., *Chairman.*
JOHN O. STONE, M.D.,
ISAAC WOOD, M.D.

At its close it was on motion voted that the report be accepted.

Discussion arose as to its proper disposal, when Dr. A. K. Gardner asked if the report was signed by the *whole* committee.

Dr. W. Parker said it was not yet, that Dr. Barker had declined to do so, and that he had beside his own signature that of Dr. Stone and Dr. Isaac Wood. Dr. Stevens was still absent from the city, but he had no doubt he would sign it. Dr. Metcalfe and Dr. Anderson he had expected to meet at the Academy, and obtain their signatures, but they were not there, and he had not their signatures.

Dr. Barker said he had only heard the report of the committee the evening previous, at a meeting called for that purpose, that he was astounded at its statements and principles, and that he had therefore refused to sign it. Had time been allowed to him, he would have prepared a minority report, to present at this meeting. That, however, was not possible ; but he had, for his convenient reference, written out some of his reasons for withholding his signature, and would, with the permission of the Academy, proceed to read them.

In medical science * there are opinions and doctrines which have been handed down from generation to generation, defended by most illustrious names, accepted by the profession generally as demonstrated facts, without ever being called in question. If we search for proofs on which these doctrines rest, we find them neither in the annals of science, nor established by our own research. Yet to call in question such opinions or doctrines, is to fearfully jeopardize one's professional reputation and personal position.

In a paper read before this Academy six months ago, Dr. Green claimed to have carried topical medication directly into the trachea and bronchial tubes, by means of the sponge probang, or a laryn-

* The remarks by Dr. Barker, are copied from the written notes used by him at the meeting.—Ed.

geal tube. This it must be conceded was a most startling announcement. It has been received by the profession with great distrust. If true, Dr. Green has made a great discovery, one of the greatest made in practical medicine in the present century—one which will reflect not only great honor upon him, but upon the Academy of Medicine, before which his paper was first read, and which will add to the laurels of American medicine. For although Sir C. Bell, Mr. Vance, Mr. Cusack, MM. Bretonneau, Trousseau, and Belloc, each have applied medication to the various parts of the throat, neither of them have professed to carry it through the larynx into the trachea and bronchial tubes. If Dr. Green's claim be untrue and unfounded, he has been guilty of charlatanism to such a degree as ought henceforth to exclude him from all position among honorable men in the profession. It was then incumbent on the Academy to have this subject thoroughly investigated before endorsing the claim of Dr. Green. A committee was appointed for this purpose. The chairman of this committee is a gentleman who commands the fullest confidence of the profession, as a man of great discrimination, practical sagacity, and honest purpose. I, for one, and I believe most others, believed that this report would definitely settle the points in controversy. The professional reputation of Dr. Green, of the committee who sign the report, of the Academy who act upon it, are all involved in the decision to which we may arrive. Six months have passed since this committee was appointed. The report which has just been made, was first read to the committee *last* evening. As one of that committee, I could not sign that report, and I feel bound to state to the Academy, the reasons why I can not sign it. This is my only resource, as the late hour at which the committee adjourned, left me no time to prepare a minority report. With all due respect to the gentlemen who compose that committee, I shall examine their report with reference to its scientific value.

While I fully concur with it in the statement of facts, as to the experiments witnessed by the committee, which were most faithfully and laboriously recorded by Dr. Stone, the secretary of the committee, I am compelled to dissent from many of the deductions of the committee. I shall show that these experiments have very little value, as determining the practicability and feasibility of the operations now under discussion. I shall show that the reasoning in the report is illogical and fallacious, that the conclusions are "lame and most impotent." But before examining these points, I must allude to another feature in the report. In listening to the report, I think

every one must have been struck with its remarkable barrenness and deficiencies in regard to the *literature* of the subject. It is usual in such reports to give a summary of what has been done before, in order thus to better determine what is really new and progressive in the claims of innovators. This report alludes to the fact, that Hippocrates proposed to use the laryngeal tube, and that it had also been advised by Mr. Ryland. Hippocrates gives the following advice :—"Fistulæ in fauces ad maxillas intrudendæ, quo spiritus in pulmonem trahatur." "Canulas should be carried into the throat, along the jaws, so that the air can be drawn into the lungs." This practice seems to have been but little followed, and it was altogether abandoned after Asclepiades proposed bronchotomy. It was almost lost sight of, when Desault revived it. It was in some cases really introduced, and left a longer or shorter time in the *trachea* and *larynx*. Dr. Finaz of Seysell, was the first (1813) to propose the use of this means, in a case of œdematous laryngitis, but the proposition was not accepted by the physician in attendance. Dr. Ducasse (1817), in a similar case, urged the surgeon to take a gum elastic sound, in order to introduce it into the glottis, if the respiration should become impossible, but it was not employed, and tracheotomy not being performed, the patient died. But we have, recorded in the annals of science since that period, many cases where the tube has passed into the trachea as a remedial measure, in cases of impending suffocation. Prof. Lallemaud resorted to this method in two cases, one of which is reported by Dr. Sestier, the other by Dr. Justin Benoit. The latter also operated in this way in one case of his own. Desault reports three cases, Dr. Giraud two, Bichat one. Another case is reported as occurring in the hospital of Lyons, in which a soldier, who had attempted to kill himself, was *nourished and breathed fifteen days*, by means of two sounds, one introduced into the œsophagus, and the other into the larynx.

Mr. Ryland, who is alluded to by the committee, thus speaks of the introduction of the sound into the trachea : "The idea of the aperture of the glottis being closed by the abasement of the epiglottis upon it, has long since been exploded, and it is now well known that a tube, passed in the manner just indicated, will, if directed by a scientific hand, readily find its way into the trachea."

It will thus be seen from the record, that although the experiments of your committee have been very amusing and very interesting, yet their testimony was not needed to establish the practicability of carrying a tube through the larynx into the trachea. The profes-

sion had already abundant and convincing evidence of this fact. But while the report admits the practicability of passing the tube, the committee assert that they have no "reliable evidence" that the sponge probang has been passed through the larynx into the trachea. To me this seems a most extraordinary assertion. I propose to examine the grounds on which they make this assertion, first philosophically, and next historically. Are there any anatomical or physiological difficulties in the way of passing the sponge probang? The anatomical difficulty must be either in effecting an entrance into the opening of the canal, or from want of correspondence between the size of the object to be passed, and the diameter of the canal through which it is to pass. The numerous precautions which nature has taken for preventing the entrance of foreign bodies into the air passages, are so many obstacles to the introduction of the sound or probang into the same canals. The first obstacle that the instrument meets with, is the epiglottis, which in a state of repose is elevated. The second obstacle is, the plane of the superior orifice of the larynx, which is not horizontal, but oblique from above, below, and from before backwards. The probang can then easily glide in the same direction, and pass over into the œsophagus, unless by elevating the external extremity; the other be brought perpendicular to the plane of the orifice; a third obstacle is formed by the normal narrowness of this orifice.

The precise length and distensibility of the aperture of the glottis, become important points in reference to the settlement of the question under consideration. The results of Muller's measurements, as given by Dr. Watson, are as follows:—

	<i>Male Larynx.</i>		<i>Female Larynx.</i>	
	<i>Millimetres.</i>	<i>Inch.</i>	<i>Millime.</i>	<i>Inch.</i>
Mean length of chords in state of repose,	18 1-4	0-783	12 2-3	0-486
Mean length in state of greatest tension,	23 1-6	0-920	15 2-3	0-667

And those of Dr. Watson, approximate these very closely:—

	<i>Male Larynx.</i>		<i>Female do.</i>	
	<i>Inch.</i>		<i>Inch.</i>	
Mean length of aperture of glottis in state of repose,	0-800		0-605	
Ditto, in state of greatest tension,	1-100		0-757	

The mean results then are:—

	<i>Male Larynx.</i>		<i>Female Larynx.</i>	
	<i>Inch.</i>		<i>Inch.</i>	
Length of aperture in state of repose,	0-765		0-555	
Ditto, in state of tension,	1-013		0-696	

Hence as Dr. Watson remarks:—"When it is remembered, then, that the aperture of the glottis measures, upon an average of very

many cases, fully seven-tenths of an inch in the male, and fully half an inch in the female, while the organ is at rest, and that it may be stretched in the one case fully two-tenths, and in the other nearly three-tenths of an inch more : it will surely be admitted by any unprejudiced person, that a compressible sponge of one-half of an inch in diameter, may be passed through the opening."

Much larger bodies than the sponge probang, which Dr. Green uses, have passed through the aperture of the glottis. I could enumerate and refer to a great number of instances of this kind. In one case, three artificial teeth in one block, with two wooden pivots, making a mass $\frac{5}{8}$ ths of an inch in breadth, and $\frac{7}{8}$ ths in length; in another a tin whistle, 1 inch in length; in another a "puff dart," which is formed of a nail, wrapped round at one end with worsted, resembling very much in shape the probang; and in another instance still, a sponge $1\frac{3}{4}$ inches long, $1\frac{1}{4}$ wide, and $\frac{1}{6}$ of an inch thick. Now all of these are very much larger than the sponge probangs, which Dr. Green uses. There is, therefore, no physical impossibility preventing the passage of the sponge probang. On the cadaver this is done with perfect facility and ease. Prof. Watson of Glasgow, says :—"Every one can make trial for himself, how easy it is to introduce such instruments into the trachea on the dead subject. Over and over again have I performed this experiment, and I venture to say, that in all my repeated observations of this kind, I never experienced the very slightest difficulty."

Dr. Conant of this city, has also repeatedly demonstrated before divers medical men, the feasibility of this experiment, and I take it upon me to say, that he will with pleasure satisfy any honest enquirer after truth of this fact.

The anatomical difficulties then are not insuperable. It is the physiological difficulties which most embarrass the operator. Those arising from the *sensibility* and irritability of the parts. They are first to be trained, and thus the sensibility and irritability are overcome. Therefore, Dr. Green, in his work on "Diseases of the Air Passages," says :—"In cases in which it becomes necessary to cauterize the interior of the larynx, the aperture of the glottis should not be passed at once. The part should be *educated*, by applying the solution daily for several days, to the faucial and pharyngeal region, to the epiglottis, and about the opening of the glottis. Proceeding in this manner, that exquisite sensibility which belongs to the lips of the glottis, is in a good degree overcome, and the instrument may then be passed into the larynx, without producing half the amount

of that irritation, which its introduction below the epiglottis would have awakened at first." Of a similar tenor are the remarks of Dr. Watson, in his recent work on topical medication of the larynx :—"The slightest touch of the probang," he says, "may well be supposed to cause complete closure of the glottis, and this does seem an almost insuperable obstacle at first sight to the operator. But he must begin his manipulations, by educating the upper part of the larynx, and the fauces themselves to bear the presence of the instrument before he proceeds further, and when this has been accomplished, he must not think of forcing through the closed glottis. He must rather surprise it during an act of inspiration, when its muscles are relaxed, and its aperture open, for then he will find the introduction of the sponge both safe and easy."

Now, sir, having shown that the passing of the sponge probang is neither anatomically or physiologically impossible, I proceed to give the historical evidence, that it has been passed probably many hundred times.

The report of the committee ignores all evidence, as furnished by the statements of others. They base their report and their conclusions entirely upon the results of the experiments which they have witnessed, to which they have applied certain differential tests. The success or failure of these experiments, have been made to depend upon these tests. I shall presently examine the *value* of these experiments and tests. But in discussing the practicability and feasibility of these operations, I see no reason why we should be excluded from using the testimony of other men, equally distinguished and equally competent, as those who have signed that report. Well, then, Drs. Cotton of the Brompton hospital for consumption, Prof. Bennett of the Edinburgh University, Dr. Watson of Glasgow, and many others of distinction in Great Britain, aver in their publications, that they do pass the sponge probang through the larynx into the trachea. In this country, there are a host of physicians who claim to have done the same thing. It will suffice for me to quote one only. In the Gazette Hebdomadaire of Paris, under date of Jan. 27, 1854, appears a communication, a copy of which was sent by its author to the Boston Medical and Surgical Journal, from which I extract the following sentence :—"The possibility of introducing the sponge into the larynx has been doubted in France. I have, however, thrice proved its *feasibility* in the clearest manner." This communication is signed John G. Adams, &c., &c., New York.

But the committee have preferred to rely upon their own experi-

ments and tests, rather than to take the testimony of any man, however eminent.

Now let us see how much value these experiments have. The committee have tabulated a certain number of differential symptoms, to distinguish the passage of an instrument into the trachea and œsophagus. The report says :

“The symptoms which distinguish the passages of an instrument into the trachea and œsophagus, may be thus contrasted :

TRACHEA.	ŒSOPHAGUS.
1st. Suffusion of the face, rapidly increasing to turgescence and lividity.	1st. Suffusion of the face slight, rapidly subsiding, with cessation of retching and cough.
2nd. Great anxiety and alarm, not easily pacified.	2nd. Little anxiety, easily pacified.
3rd. Eyes wild, staring and overflowing with tears.	3rd. Eyes natural, slight suffusion from tears.
4th. Cough violent and spasmodic.	4th. Little or no cough.
5th. Respiration greatly disturbed ; inspiration loud, hoarse and stridulous, expiration attended with violent cough, like that of laryngeal phthisis, ejection of bronchial mucus through the tube, and finally free breathing through the tube.	5th. Respiration little if at all disturbed.
6th. Voice extinguished ; a hoarse whisper, interpreted with difficulty.	6th. Voice distinct, often quite natural.
7th. Retching slight.	7th. Retching and vomiting a common symptom.

“We would, therefore, establish it as a rule, to which ordinarily there are no exceptions, that the rational signs, above tabulated, will differentially distinguish the course, which the instrument takes, whether into the laryngeal or œsophagus passages.”

By these tests they have avowedly decided whether an experiment is successful or fails. Now, sir, I am prepared to show that these differential symptoms are entirely fallacious, that they have no value in determining the question. I do not intend to show by reasoning, that the symptoms, when applied to the use of the tube and probang, are fallacious, but I intend to show this by facts. This will probably be more satisfactory to the Academy, although I think it can be equally proved by reasoning. I shall take the symptoms recorded by competent observers, where the reporters had no object to gain except to relate facts.

Desault introduced an elastic sound into the œsophagus of a patient, who had a transverse wound of the neck, in order to pass liquid food into the stomach. A sudden cough took place at the moment of introduction. The patient made several efforts to vomit ; he was left

alone for a few moments, when he became calm, which continued for an hour. At the end of this time, an attempt was made to inject a small quantity of soup through the sound. Immediately the cough returned more violent than ever, even convulsive.

The introduction of the fluid was arrested for two hours. The patient remained tranquil during this time, but the moment a trial was made to introduce a few drops, the cough and agitation returned. Desault, suspecting that the tube was in the larynx, brought the flame of a candle near to the extremity, so that the air which escaped caused it to flicker. The sound was withdrawn and placed in the stomach, and then a glass of soup was carried into the stomach without a sign of pain. Now, the tube used was an œsophageal one, as large as one of Dr. Green's probangs.

Now, this one case alone is sufficient to overthrow the theory of the committee, as to the differential symptoms between the presence of an instrument in the trachea, and in the œsophagus. The committee deduce their symptoms from ten cases, in which the tube was successfully, as they claim, passed into the trachea. Now, this afternoon, I have looked over ten cases reported long before this discussion, and if I had had time to copy them off, they would have shown conclusively, that the symptoms which are enumerated in the report, cannot be relied upon as proof of the presence of the instrument, *either* in the trachea or in the œsophagus. It needs no argument to prove, that if the tests of an experiment are fallacious, the results are wholly unreliable.

One other point I must briefly allude to. In testing the practicability and feasibility of every operation, it is incumbent upon those who would fairly and honorably test these operations, that they should be governed by the same rules which govern those who claim to have performed the operation. Now, in three out of five experimental meetings of the committee, this was notoriously and obviously not the case. Furthermore, if there was only partial success at the two other meetings, this want of success can be readily explained on *physiological* grounds. The difficulties were not *anatomical*.

The committee also report on the form of instrument best adapted to entering the larynx. I confess this struck me as somewhat ludicrous.

But if, after succeeding in ten cases, the committee have been able to suggest an improvement on Dr. Green's method, I doubt not he will be equally gratified with the rest of the profession.

I come now to that part which relates to the utility of topical

medication of the larynx, by means of the sponge probang and injections. I heard this part of the report last night with unfeigned astonishment. I could not forbear asking the chairman, if he seriously intended to introduce the case of death at Bellevue Hospital, as a part of the report on the utility of the topical medication, after the manner proposed by Dr. Green. The committee have now had six months for getting the facts, and determining how far practical medicine has been advanced by this method of treatment. They will unanimously concur in my statement, that Dr. Green has offered them every facility for this purpose. He has invited them in the fullest manner to visit his office, any and every day, from nine to twelve, where they would have the opportunity of getting the previous history, by interrogating the patients, of making a physical examination, and of watching the progress of the cases and result of the treatment, and especially of estimating how much was due to the topical medication, and how much to other medication and hygienic influences. This was due to the Academy and the Profession. As they have not done this in a single instance, their opinion could not be regarded as anything more than a theory without knowledge. But the report has not committed those who signed it, even so far as this. It has, however, committed them in an infinitely worse way. At Bellevue Hospital, a broken down, feeble patient, in an advanced stage of phthisis, is selected to test the practicability of passing the tube into the larynx. It was successful. An injection was thrown through the tube into the bronchi, not as a therapeutic resource, but as an experiment, Dr. Green neither advising or suggesting it. The patient died in 26 hours. The committee report this case, with the result of the autopsy, which the committee did not witness, and this is all they have to say of the *utility* of topical medication, as proposed in the paper referred to them. Was there ever a more monstrous dereliction of duty on the part of a scientific committee, appointed to report before a professedly scientific body? I will not now characterize such a course in terms such as I think it deserves. It is well known that Mr. Roux, the distinguished Surgeon of Hotel Dieu, was strongly opposed to the operation of lithotrity, as proposed by Civiale, Amussat, &c. Suppose he had operated or attempted to operate, and the patient had died from the results of the operation. Suppose he had been appointed to report to the Imperial Academy on this subject, and had pretended to report on its practicability and *utility*. Suppose, without examining the cases, or giving the history or results of those

of Leroy d' Etiolle, Civiale, or Amussat, in speaking of the utility of the operation, he had entirely confined himself to the detail of his case, which died. I ask what would have been the views of the profession throughout the whole civilized world, in regard to such a course? And yet, in some particulars, the supposed illustration is made more favorable to the committee, than the facts warrant.

But, I will add nothing farther on this point. I will only present some facts, which I have gathered and witnessed, in regard to the utility of the plan proposed in the paper referred to the committee.

Dr. Barker then referred to some cases which he had watched with great interest, whose previous history was well known to other medical men. He read letters from three, in answer to notes of enquiry from him, describing their present condition. He also read a letter from Dr. Farnsworth, of Norwich, Conn., in answer to one from himself, in relation to the effect of the treatment by injections of nitrate of silver, in a patient of his laboring under advanced phthisis with complete aphonia. Dr. Farnsworth described her as "much improved by the applications of the nitrate to the bronchial tubes. She is able to articulate aloud, which she had not been able to do at all for many months before she visited Dr. Green. The expectoration is much better in character, and very much more easily made. She is also stronger, can walk about, and rides out every day."

He also read a letter from Dr. Bowditch, of Boston, who had made use of the injections in a few cases, and believed that they diminished in a marked degree the cough and expectoration.

Dr. Stone rose and said that he spoke only as an individual,—that he entered upon the committee determined only for justice, with prejudices in favor of the paper, and a desire that Dr. Green's statements might be proved correct. He had been compelled to come to the conclusions of the Report which he signed. As to Dr. Barker's statements, he freely acknowledged the superior accuracy and minuteness of the history of catheterism of the trachea. But with regard to the cases which he (Barker) cited, no reliance could be placed on them. It was well known that consumptives, under the hope inspired by a new mode of treatment, varied very much in their weight, increasing to the extent of 40 pounds, when this is taken in connection with the opening Summer, and favorable weather, with out-door exercise. And yet all is of no avail. They rapidly sink and die. The patient's opinion then is of no value. It must be *known* where the

tube is. That is the point. Dr. Barker had introduced two cases. Dr. Stone doubts the accuracy of Desault's report. He believes that the different positions of the two tubes described by him (one in the trachea, and one in the œsophagus), are incorrect. His (Stone's) belief was, that it being a case of cut-throat, there was a wound made not only in the trachea, but in the œsophagus, and that there being thus an opening from one to the other, one tube had passed from the œsophagus through this wound into the trachea, and not through the larynx. Such a case he had seen in London, under the care of Mr. Stanley, when the tube passed into the œsophagus would sometimes escape into the trachea, and sometimes continue to the stomach.

We must have some signs of the position of the tube. There is *always* suffocation, and a current of air through the tube, not a simple jet. Dr. Stone knows the danger of fallacy of men who have preconceived ideas, and that they are not reliable.

He doubts the practicability of passing a catheter through the larynx, even on the dead body, if it has only Green's curve; at any rate, it cannot generally be done, though it may more frequently with Taylor's curve. On the dead body, however, the parts have not "taken the alarm" as they do in the living body, as soon as the tongue is depressed by the spatula, or by the finger. When the tongue is thus depressed, the parts take the alarm, and "the arytenoid cartilages, I believe they are called," can be seen to approximate, and the passage is closed.

Dr. Griscom wished to know if Dr. Barker's paper was before the Academy as a Report.

The chairman, Dr. F. Campbell Stewart, said they were Dr. Barker's *notes*, and not a *Report*, simply a statement of Dr. Barker's reasons for not signing the Report that had been read, and that they could not be brought before the Academy formally.

Dr. Isaac Wood, wished to know if all the members of the committee were present at the first reading of the Report, at Dr. Stone's office?

Dr. Stone said Dr. Stevens was out of town, as was also Dr. Barker, the rest were present.

Dr. Wood continued.—At that time the Report was carefully and deliberately scanned by those present, and was assented to. He was then surprised at Dr. Barker's course, in making a separate Report. One remark Dr. Wood desired to make. He was put upon the committee without his knowledge or consent. Was disinterested in

respect of both sides, as he believed entirely so. When he heard Dr. Green's paper read, he was much gratified, and so expressed himself. There was, however, no reliable evidence furnished by the experiments before the committee. Allusions to base motives were unworthy of a member of the New York Academy of Medicine.

Dr. Griscom, thinks the reply should be before the Academy, as it contains the facts of the minority, and is of importance to all. He, therefore, *moved* that Dr. Barker be requested to prepare a Minority Report. His reasons were, that the committee's Report was extensive and detailed, and he would remark that he was in Dr. Wood's position, with regard to the paper when it was read, and stated that if sustained, it was an era in medicine. He was anxious for the Report, and his confidence in the committee was not disappointed. Dr. Barker's paper was at first fair, but afterward unreliable evidence was admitted. He referred to that of the patients themselves. If a patient says anything, he only echoes the opinion of his physician. Let the Academy have both Reports before them. He believes that the Minority Report will but confirm that of the Majority.

Dr. Barker stated that he intended to prepare a Report, *based on* his notes, which he had used now for his own convenience, but considered unworthy of being called a Report. It would, therefore, be unnecessary to pass Dr. Griscom's motion.

Dr. John Watson said he had not been accustomed to appear at the Academy meetings, but to-night had come in, because he understood the Report of this committee was to be made. He thinks there is some truth in both Reports. The committee had made insufficient examination into the effects of nitrate of silver. So too with regard to the use of the sponge probang. He was sure, he *knew*, that he sometimes had passed it into the trachea, between the vocal chords. It was difficult for him to do it, still he was satisfied that sometimes he had succeeded. As to Dessault's case, he believed his Report, and had himself had one like it. It was a patient with stricture of the œsophagus, which it was necessary to divide, and to sustain life he used a stomach tube, through which to pass food into the stomach. The tube very frequently slipped into the larynx. The precise number of times he could not say, but he should think in one-fourth of the instances. He could tell certainly by the feeling, whether it was in the œsophagus or trachea. He was satisfied that it went there, and the patient had great difficulty of breathing. He thought the matter should be referred back to the committee for reinvestigation, and a more thorough examination of the subject.

Dr. W. Parker objected to a return of the subject to the committee. His impressions of the Paper were favorable to it, as were also his feelings. The first step which he took was to make some observations for himself, in connection with Drs. Stone and Taylor. Dr. Taylor said he had employed the tube, and it was easy to pass it into the trachea. Dr. Taylor had full conviction that it was there. A young woman, Mary Norton, was found who consented to the trial upon herself. She could tell where the tube was. There were suffocation, suffusion of the face, a current through the tube, after a little time quiet and easy breathing, a husky thick and difficult articulation. Thinks the rational signs of the tube in the trachea, are as clear as the noon-day sun. The committee have tried it carefully, and have told all they knew. Prefers a new committee should be raised. For himself is entirely satisfied. The committee witnessed 120 operations, and he was astonished at their failure. Before beginning such an investigation, there must be rational signs established, as in auscultation. Air passing through the tube is not evidence of its being in the trachea. Air may be eructated from the stomach, and pass through the tube, and in the effort of gagging, air is swallowed, which may again come up through the tube. It is true, that the tube, when in the trachea, allows the patient to breathe through and around it. He can vouch for the honesty of the whole committee, and that of his friend Prof. Barker, and fully appreciates the difficulties of Prof. Barker's position.

Dr. Stone would be excused from serving longer. Has done his duty. If Barker or others disavow the Report, he will have nothing more to do with it.

Dr. Wood also declined serving any longer.

Dr. Watson, by permission, then withdrew his motion of recommendation.

Dr. A. K. Gardner wished to know if any attention was given to the alvine evacuations, as affording indications of the presence of nitrate of silver in the alimentary canal. Such evidence would be afforded, if, in the numerous patients injected by Dr. Green, it was thrown into the stomach or œsophagus, as the committee believed. Did the committee enquire into this, which would furnish a reliable test.

Dr. W. Parker said that no attention was paid to it. The dejections were not examined.

Dr. Sayre wants a reliable Report presented to the Academy. Many of us had once fallen into error, in denying on anatomical

principles, the possibility of entering the larynx, and it was important that a repetition of it should be avoided. He should be inclined to renew the motion for recommitment. Air escaping from the stomach, or when swallowed, could hardly be confounded with air from the lungs. The former was only a little puff, the latter a more or less constant stream. The committee should reexamine the matter more carefully.

It was then moved, that the Society meet this evening fortnight to hear the Minority Report, and for the further discussion of the matter. After some debate the motion was adopted, and the Society adjourned.

ADJOURNED MEETING.

Wednesday, June 20th, 1855 : The adjourned meeting of the Academy was held this evening according to appointment. The venerable president of the Society, Dr. Francis, occupied the chair. The members were apparently gratified to see his well known face among them. The attendance of members and other medical men was very large, perhaps the largest the Academy has had. Among the distinguished strangers, we noticed the Hon. Mr. Venables of North Carolina, formerly a physician, though for some time a practitioner of law, and member of Congress.

When order had been obtained, Dr. Barker said, that, delighted as he was to see their president in the chair, he felt it might be tasking him too much to ask him to guide an exciting discussion, such as was anticipated. In order to relieve him, therefore, and also to permit him to take part in the discussion, he would propose that the Academy go at once into committee of the whole, with Dr. F. Campbell Stewart, one of the vice-presidents, in the chair.

The chairman decided, that the more proper course would be, to hear the Report first, and when it was thus before the Academy, to go into committee of the whole upon it.

On motion of Dr. Sayre, it was voted to take the Majority Report from the table, and that it should be again read, as some of the members were not present at the last meeting.

The secretary, Dr. Foster, stated that that Report was not in his possession. It had been given to Dr. Wood, and had not yet been brought in.

Dr. Barker asked leave to make a personal explanation. No objection being made, he said :—

Mr. President, At the last meeting of the Academy, the chairman

of the committee, while vouching for the honesty of the committee, and of myself, individually, added, that he "appreciated my position," the implication being that I had opposed the Report of the majority, because I was a friend and colleague of Dr. Green. I then had no opportunity to reply, and under ordinary circumstances, the remark would not be deemed worthy of notice. I certainly am the friend and colleague of Dr. Green, and I trust the time will never come, when I shall fail to defend a friend, or fear to meet an enemy, if the occasion demands it. But this is not one of those occasions; and in this discussion, I have spoken as the impersonal representative of certain scientific opinions. I have not forgotten that this is a scientific body, a collection of gentlemen who can and will weigh facts and arguments, who will not allow their judgments to be influenced by my feelings, or their feelings, if they have any of a personal kind. Honestly believing as I do, that the Report was wrong, and that future investigators will prove it to be so, I should have been untrue to my own reputation, and to the Academy, and unfaithful to science, if I had given even a passive assent to it. I will not stop to enquire why it was necessary for the gentleman to appeal from the scientific argument to personal position. A retort is always easy, but a retort is no argument. I shall hold myself above all personal feeling, and personal retaliation. I trust there may be here professional discussion, and even warm discussion, without the interruption of personal relations. But if adherence to scientific opinions, involves the rupture of personal relation, then I am ready for that issue.

It was then announced that the majority Report had arrived.

The minutes of the committee were again read by Dr. Stone, and are the same that were read at the last meeting. (See page 38.)

When the minutes were concluded, Dr. Willard Parker asked for the reading of the Resolution under which the committee was appointed.

This was read by the secretary, and Dr. Parker then proceeded to read the Report of the majority, and which is the same as that given in the proceedings of the last meeting. (See page 51.)

At its conclusion, Dr. Parker stated that since the last meeting of the Academy, the Report had been signed by Dr. Metcalfe, and thus had upon it the names of four of the committee (Parker, Wood, Stone, and Metcalfe). He had received a note from Dr. Anderson signing the first part, but not the second, "that is, the *cui bono*."

Dr. Stevens was present, and would answer for himself. The note of Dr. Anderson, kindly furnished to us by the writer, is as follows :

NEW YORK, June 14th, 1855.

WILLARD PARKER, M.D. :

Dear Sir, I still entertain the opinion I expressed at the last sitting of the committee, on the Paper of Dr. Horace Green ; and which I also repeated to you on the following morning ; that the second division of the matter referred to the committee, had not received that investigation which would enable them intelligibly to report upon it. You will please receive this as my signature to the *first* division of the Report

With very great respect, yours,

JAMES ANDERSON.

Dr. A. H. Stevens said that he had prepared a report, and with permission would read it.

It having been urged that the minority Report of Dr. Barker should first be read, Dr. McFarland, of Williamsburgh, stated that Dr. Stevens' was a part of the *majority* report, and therefore ought to be first read.

The president requested Dr. Stevens to proceed.

DR. STEVENS' REPORT.

The undersigned, one of the committee appointed to report on the subject of medicated injection into the trachea, as performed by Prof. Horace Green, not having had the opportunity to witness all of the facts in relation to this subject, that have come under the notice of his colleagues, begs to submit this, his separate report. He was present at two meetings only, at Prof. Green's office, and witnessed, in addition to some very skilful applications of caustic solutions to sinous passages in the fauces, repeated introductions of the sponge probang, of the hollow tube, and of nitrate of silver injections through it.

As regards the question of the possibility of the introduction of the probang into the trachea, he did not see enough to enable him to consider the practicability of such introduction as a proved fact. But of the practicability of passing a catheter into the trachea, he was confirmed in his previous belief, that it admits of no question whatsoever. It was moreover proved that the injection of a solution of nitrate of silver in quantities equal to two fluid drachms is quite practicable with ordinary skill. In two experiments performed in his presence by Prof. Green, it was not followed by alarming symp-

toms, or, so far as he knows, dangerous consequences ; a result quite different from what *à priori* reasoning had prepared him to anticipate. If further experience should prove its entire safety, such experience, on a very extended scale, and by numerous observers, can alone determine its therapeutic value. But those who may incline to make such experiments, will doubtless remember that a solution of two drachms of nitrate of silver, of the strength stated to have been employed, ℥j. to ℥j. of water, would give ℥ss. of the solid caustic ; enough to make an eschar through the cutis of one inch in diameter. Analogy would lead to the conclusion that so large a quantity, expending its whole force upon the tracheal, and such parts of the bronchial membrane as it came in contact with, would be likely to induce inflammation of a grave character. The quantity of caustic actually brought into permanent contact with a stricture of the urethra is a very small fraction, probably not $\frac{1}{20}$ part of a grain. A stick of caustic weighing only four or five grains, may be used daily for months, with scarcely a perceptible diminution of its bulk, even in hospital practice.

In regard to the question of the practicability of directing the solution to a particular part of the bronchial tubes, or into any cavity connected with them, at the pleasure of the operator, the reporter has seen nothing to lead him to an affirmative answer.

All which is respectfully submitted.

ALEX. H. STEVENS,
of the committee, &c.

The president then called for the reading of Dr. Barker's minority Report.

MINORITY REPORT.

At a meeting of the New York Academy of Medicine, Dec. 6th, 1854, the following Resolution, furnished to me by the Recording Secretary, was passed, viz :

Resolved, That a committee of seven be appointed by the chair to enquire into and investigate the treatment proposed by Dr. Green, in his Paper read this evening.

In the Paper referred to the committee, Dr. Green first alludes to the skepticism of Prof. Erichsen of London, and of Prof. Trousseau of Paris, as to the possibility of "passing the sponge probang through

the larynx into the trachea, even of the cadaver, and much less into that of the living subject." Dr. Green claims "that this method of medicating the larynx and trachea, is accomplished with much ease, and, ordinarily, with great certainty; and that, by this means, diseases of those organs, which would otherwise have proved mortal, have been repeatedly arrested." He goes still further in asserting that the sponge probang "has been passed at will into the right or left bronchial divisions." To prove that it could be passed through the vocal chords, Dr. Green attached a sponge of the same size with those which are used with the ordinary throat probang, to one of Hutchings' flexible tubes, and wetting the sponge with a strong solution of nitrate of silver, he passed it down to the vocal chords, through the rima-glottidis (as he supposed), several inches, into the trachea. The patient breathed through the tube for several moments, and extinguished a lighted lamp by blowing through the tube. In order more rigidly to test this experiment, in another patient, a large paste-board card, perforated in the centre, and of sufficient size to screen the nose and mouth completely, was then slipped over the tube, to which it fitted closely, and the patient directed to blow out the light, which was accomplished through the tube as promptly as in the first instance. In another patient, a small air-tight elastic bag was tied over the upper extremity of the tube, and on introducing the instrument six or eight inches into the trachea, this little bag was inflated and collapsed several times, by the act of inspiration and expiration, on the part of the patient. In another case, a small ball of floss was suspended by a thread before the mouth of a tube, and this was alternately drawn into and expelled from the opening, by the act of respiration. Dr. Green believed that these experiments conclusively proved "that the operation of passing the sponge probang into the larynx and trachea, is positively being accomplished."

From these results, he was led to enquire, "what shall now hinder the introduction of medicinal agents through this tube into the lungs, or directly into the bronchi and their terminations? What will prevent the injecting, even of a vomica, *under favorable circumstances*, with appropriate remedies?"

Dr. Green at once endeavored to put in practice the inferential suggestions resulting from the experiments above alluded to. In the Paper referred to the committee, he professes to have "treated for a longer or shorter period thirty-two patients laboring under tubercular or bronchial diseases, by the direct introduction into the lungs of a strong solution of nitrate of silver, injected through the elastic tube."

He details with considerable minuteness three cases, "whose history and sanatory condition, on coming under my [his] treatment were known to other medical men." He claims that this treatment has been "invariably salutary," both in the cases of chronic bronchitis, and in those of tubercular diseases; or, to be more specific, he asserts that this treatment produces a marked decrease in the cough and expectoration, an abatement of most symptoms which arise from local inflammation or irritation in the pulmonary apparatus, and *consequently* a decided improvement in the general health of the patient. Many important points in regard to the treatment, he leaves "to be solved by future experience, and by repeated observations." Dr. Green adopts the following propositions of Prof. Bennett of Edinburgh, from his work on the "Pathology and Treatment of Tuberculosis :"—

1st. That not unfrequently diseases entirely seated in the larynx or pharynx are mistaken for pulmonary tuberculosis.

2d. That even when pulmonary tuberculosis exists, many of the urgent symptoms are not so much owing to disease in the lung as to pharyngeal and laryngeal complications.

3d. That a local treatment may not only remove or alleviate these complications, but that, in conjunction with general remedies, it tends in a marked manner to induce arrestment of the pulmonary diseases.

The conclusion of Dr. Green's Paper contains the following three distinct propositions :—

1st. That direct medication of the lungs, by means of catheterism of the air tubes, has not before been accomplished.

2d. That the operation may be performed by the dexterous surgeon with ease and facility, and with perfect safety to the patient.

3d. That the results of this method of treating disease, whether it has been employed in bronchial affections or in the commencement of tuberculosis, have already afforded the most gratifying indications that practical medicine will be greatly advanced by this discovery.

This condensed summary of the Paper referred to the committee seems necessary, in order clearly to define the duties of the committee. They are manifestly—

1st. To ascertain whether direct medication of the lungs, by means of catheterism of the air tubes, has been before accomplished.

2d. To ascertain whether the operation may be performed by the dexterous surgeon with ease and facility, and with perfect safety to the patient.

3d. To ascertain, as far as possible, the therapeutic results of this method of medication.

That the committee clearly understood their duties to be as above stated, is proved by the record of the secretary, Dr. Stone, from which the following paragraph is an extract: "It was concluded, after some general discussion of the subject, that the committee should endeavor: 1st, to settle the question of the passage of the tube into the trachea; and 2d, as far as possible, to ascertain the utility of the injections of the nitrate of silver into the lungs." The title of the Paper referred to the committee is, "On the employment of Injections into the Bronchial Tubes, and into Tubercular Cavities of the Lungs." The practicability of passing the sponge probang through the vocal chords, was not even suggested by any member of the committee as pertaining to their duties. But as a majority of the committee have declared, by appending their names to the report, "That there is no reliable evidence, in the opinion of your committee, that the sponge probang has been passed through and beyond the vocal chords," it is proper, before the Academy shall endorse such a statement, that they enquire whether the committee have investigated this subject, and what they mean by "reliable evidence."

Neither Dr. Green, nor any other advocate of the practicability of passing the sponge probang through the vocal chords, profess to do it without first overcoming the irritability and sensibility of the parts by repeated applications of the nitrate of silver to the faucial and pharyngeal region, to the epiglottis, and about the opening of the glottis. To investigate this point, then, it is necessary that the above conditions should be fulfilled. The record of the Secretary proves that this was not done in the patients experimented upon at the first and third meetings of the committee at Bellevue Hospital. At the second meeting of the committee at Bellevue Hospital, those experimented upon had received, some three, and some four applications of the nitrate of silver, but that the sensibility and irritability of the parts had not been overcome, was disgustingly evident to all present. The record says, "these patients were nervous and timid; the vomiting of the first one excited the rest, and upon the entrance of the tube into the mouth, they gagged and became unmanageable." The experiments, then, at Bellevue Hospital have no possible bearing on the question, and should be excluded. At Dr. Green's office, the sponge probang was avowedly passed into two patients, before the committee. Their investigation is, then, confined to two cases, and from these they deduce a proposition which they ask this Academy to endorse.

Let us next see what they mean by "reliable evidence." In regard to the first patient in whom the probang was passed, the record says, "very slight cough was occasioned, and only slight stranguation, consequently the operation cannot be regarded as satisfactory." In the second case, the record says, "consequently, judging from the symptoms, was not satisfactory." The symptoms were negative, "no cough, spasm, or suffocation, was produced." The committee say, "The best evidences of the passage of an instrument into the air passages, are the rational signs." They give in full what they deem the "rational signs," but these surely cannot apply to the sponge probang with an impervious handle. They will not claim that a patient with such an instrument passed through the vocal chords into the trachea, will have a "loud, hoarse, and stridulous inspiration,"—that the expiration will be "attended with violent cough, like that of laryngeal phthisis," that there will be "ejection of bronchial mucus through the tube, and finally *free breathing through the tube*." Striking out the words "through the tube," the phenomena which the committee have described as "rational signs" of the passage of an instrument into the air tubes, almost exactly characterize a paroxysm of whooping-cough. Still more perfectly do they describe the effects of a first application of a strong solution of nitrate of silver to the faucial and pharyngeal surface in most patients, when the probang does not pass at all into the air passages. It necessarily follows that the "rational signs" of the committee are in no sense "reliable evidence" of the passage of a sponge probang through the vocal chords into the trachea. Contenting myself, therefore, with the positive assertion, that I have reliable evidence that the sponge probang has in many instances "been passed through and beyond the vocal chords," I deem it no part of my duty, as a member of *this* committee, to bring that evidence before the Academy. The committee were appointed "to enquire into and investigate the treatment proposed by Dr. Green in his Paper," read before the Academy Dec. 6th, 1854. That treatment is the injection of nitrate of silver into the bronchi, and, "under favorable circumstances," into tubercular cavities. I now proceed to what I conceive to be the legitimate duty of the committee.

1st. To ascertain whether *direct medication of the lungs*, by means of catheterism of the air tubes has been before accomplished. On this point little need be said, as I presume the Academy and the committee will unanimously concur in the statement, that in the

history of medicine, there is no evidence that this has ever before been accomplished.

2d. To ascertain whether "the operation may be performed by the dexterous surgeon with ease and facility, and with perfect safety to the patient."

The operation consists of two parts :—1st. The introduction of an elastic tube through the vocal chords into the trachea. 2d. The injection, by means of a small syringe, of a solution of nitrate of silver, through the tube into the bronchi. The latter part of the operation can, of course, be accomplished with ease and facility. The first part then only requires examination, and this is not new to medical science.

One of the "conclusions" of the Report of the majority of the committee is, that "Catheterism of the air passages, dates its history from the time of Hippocrates." If this be true, it would hardly seem necessary, that in the year of grace 1855, a committee should enter upon a series of experiments, to ascertain its "practicability."

But, I am ignorant of the data upon which the committee base such a conclusion. Hippocrates (De Morbis, lib. iii. 10), gives the following advice :—"Fistulæ in fauces ad maxillas intrudendæ, quo spiritus in pulmonem trahatur." "Canulas should be carried into the throat, along the jaws, so that the air can be drawn into the lungs." But, M. Sestier (Traité de L'Angine Laryngée Œdémateuse) has shown, that it is very doubtful whether the ancients really did pass the sound into the trachea. He remarks, that *αἰλασχος* diminutive of *αἶλος*, sound, means a small sound, and that under the denomination, of *φαρυγξ*, the ancients meant sometimes the *throat*, sometimes the *pharynx*, and sometimes even the *larynx*. Hippocrates then advises the introduction of small sounds, but whether into the *throat*, *pharynx*, or *larynx*, it is impossible for us to decide. At all events, the practice was altogether abandoned when Asclepiades proposed *bronchotomy*. It was almost lost sight of, when Desault, in 1801, revived it; since which time it has been really introduced, and left for a longer or shorter time in the *larynx* and *trachea*; and we have recorded in the annals of science, many cases where the tube has been passed into the trachea, as a remedial measure in cases of impending suffocation. Prof. Lallemaud resorted to this method in two cases, one of which is reported by Dr. Sestier, and the other by Dr. Justin Benoit. The latter operated in this way in one case of his own. Desault reports three cases, Geraud two, Bichat one. Another case is reported by Desault, as occurring in the Hospital of Lyons, in which a soldier,

who had attempted to kill himself, was *nourished*, and *breathed* fifteen days, by means of two sounds, one introduced into the œsophagus, and the other into the larynx. A sufficient number of cases have been enumerated to establish the fact, that this part of the operation can be performed by the dexterous surgeon, with ease and facility. Mr. Ryland, who is alluded to in the Report of the majority of the committee, thus speaks of the introduction of a tube into the trachea:—"The idea of the aperture of the glottis being closed by the abasement of the epiglottis upon it, has long since been exploded, and it is now well known, that a tube passed in the manner just indicated, will, if directed by a scientific hand, readily find its way into the trachea."

With such ease and facility does the tube pass into the trachea, that it often occurs as an accident, when the intention of the operator has been to pass it into the œsophagus, and this too with a tube much larger than those Dr. Green makes use of. Dr. Watson, at the last meeting of the Academy, mentioned one case of his own, where this happened in one-fourth of the operations, if I correctly understood him.

The experience of Dr. Watson is confirmed by many other surgeons. There are cases recorded where the tube has been introduced into the trachea, and produced so little disturbance, that the operators have believed it to be in the œsophagus, and injected liquids into the air passages, thus producing most unfortunate accidents, and even fatal results. It is sufficient for me to refer to a thesis by M. Prus, Paris, 1817, No. iii, p. 26, to the articles by MM. Thoré, and Baillarger, in the *Annales Medico-psychologique* t. v. et viii. So well is this known to surgeons, that Prof. Miller of Edinburgh, in his standard work on "Practice of Surgery," gives especial directions to prevent the occurrence of such a mistake. The following are his words:—"In most cases it is well to assure ourselves fully, that the tube is in the œsophagus, and not in the larynx, before fluids are passed downwards into the stomach. For this purpose a sheet of paper may be placed before the face, with the extremity of the tube projecting through it, while in front of the tube a lighted taper is put, which by the paper is effectually screened from the flatus of the nostrils in expiration. If, on expiration, the flame remains steady, no air impinging on it, we may proceed with the injections—the tube is certainly in the right place. If the flame be extinguished, or even made to bend considerably, it is equally plain that an error has been made, and that injection would almost certainly occasion fatal

asphyxia." The facts above mentioned, conclusively *prove that the absence of the "rational signs," as given by the committee, is no evidence that the tube is not in the trachea, and that when the committee have decided on these grounds, that an experiment was unsuccessful, their decision is wholly unreliable.* I shall recur to this point again, in examining the Record of the committee. Enough has been said to prove the practicability of the operation. I submit, however, in addition, the following letter, which I this morning received from Prof. Peaslee :—

HANOVER, N. H., June 16th, 1855.

Dear Doctor, As I perceive by the city papers that the subject of passing tubes and sponge probangs into the human trachea, is just now exciting a good deal of interest, I send a brief statement of a case in which the patient has himself introduced the tube into his own trachea, and injected the nitrate of silver through it.

The gentleman alluded to, is a *physician*, and has long been affected by follicular disease of the pharynx, with subsequent atrophy of the tonsils, and extension of the former disease into the larynx and trachea. He was formerly my pupil, and I place full confidence in his opinion, that he has passed both the sponge probang and the tube into his own trachea. He also is positive that the former had been passed many times by others before he accomplished it himself. The tube was first passed with the assistance of a medical pupil, and afterward by himself unaided, the pupil merely assisting in the subsequent injection.

On inquiring how he could be *certain* the sponge probang or the tube passed through the *larynx*, he replied that he had had the former, as well as the latter, too often slip down the œsophagus, instead of entering the larynx, not to know the difference by the sensation at once. No extreme symptoms, in the way of cough, or dyspnoea, were produced by the introduction of the tube. The gentleman to whom I allude, is Dr. D. B. French, of Bath, N. H.

Yours truly, in haste, E. R. PEASLEE.
Dr. B. F. Barker.

Let us now examine the experiments of the committee. As the great difficulty in passing the tube arises from the sensibility and irritability of the parts involved, Dr. Green never attempts the operation until this difficulty has been overcome by previous education of the parts. It is obvious that in investigating *his* plan of treatment, this prepared condition is an essential requisite for all *fair* and *reliable* experiments, just as much so as it is for the chemist, who proposes to analyze any given substance, to have his retort free from all extraneous matter. But this condition was not fulfilled in any of the experiments at Bellevue Hospital, and therefore they might with

justice be excluded, as having no bearing upon the subject. But as the committee have made use of them, we will see what these experiments prove.

Twenty-two patients were subjected to the experiment with the tube. For this occasion only I accept the decision of the committee, and set down as "failed, successful, and doubtful," as they determined. For convenience in referring to Dr. Stone's record, I have marked the patients as numbered by him.

<i>Failed.</i>	<i>Doubtful.</i>	<i>Successful.</i>
13th patient.	9th patient.	11th patient.
16th "	10th "	14th "
17th "	12th "	15th "
18th "	23d "	20th "
19th "		25th "
21st "		26th "
22d "		28th "
24th "		29th "
27th "		34th "

The experiments failed in nine patients, were successful in nine, and the results were doubtful in four.

I respectfully ask of the Academy to examine the causes of failure, as they appear in the record. Fifty per cent. of success where the results were decided. The success was more wonderful than the failure, success being achieved, under circumstances where Dr. Green would not attempt the operation in his own practice, the failure being due to causes which are not inherent to the operation, but which might have been overcome. The success proved the practicability of the operation. The failure proved nothing but the great sensibility and irritability of the parts, which condition was greatly increased from *emotional* causes.

It would seem hardly necessary to say that for the operation to be successful, it is requisite that the patient should be free from mental perturbation. The experiments at Dr. Green's office were undoubtedly less satisfactory, on this account, than they otherwise would have been. The presence of an unusual number of physicians, the discussion as to the possibility of the operation, and the tests of its success, all served to excite the patients and embarrass the operation. The only cases where failure was positive, are marked 32 and 33 in the record, and in these the failure was wholly due to emotional causes. A letter from one will subsequently be introduced. The 6th should be excluded, as immediately after the introduction of the tube, the patient, an epileptic, the well known "Blue man," had

a slight attack of epilepsy, and the tube was at once withdrawn. In the remaining ten cases, the decision of the committee was, that the results of the experiments were doubtful in four, viz : in the 3d, 5th, 7th, and 8th. In regard to the 8th no opinion was expressed by the committee ; I therefore set this down among the doubtful. The experiments failed in three, viz : the 4th, 32d, and 33d. In three, the 30th, 31st, and 34th, the experiments were successful. Here, as before, where the results were decided, the success is exactly 50 per cent. But were their decisions correct as regards those considered as doubtful, and in the 4th patient decided as a failure? Their decision was based on the absence of certain phenomena, which they denominate "rational signs." But these have already been shown to be *wholly unreliable*. Their absence proves nothing. The probabilities, mathematically speaking, are as 8 to 2, that these were all successful, and these probabilities are greatly increased by the phenomena observed as noted by Dr. Stone, to which record I refer for proof. We are therefore fully warranted in claiming success in eight out of ten patients in whom the experiments were tried at Dr. Green's office. It remains to enquire whether, in the two unsuccessful results, the failure was inherent to the operation. In one (the 32d), the patient, a highly intelligent man, had had the tube passed repeatedly both into the trachea and into the œsophagus. According to the committee, he was competent to decide, by his sensations, into which passage the tube is passed, and he avers that it has been many times passed into the trachea. In regard to the other failure, I will introduce the following correspondence :

NEW YORK, June 19th, 1855.

Dear Doctor, As your name appears in the record of Dr. Stone, secretary of the committee on "Injections into the Bronchial Tubes, &c.," as one in whom the experiment of passing the tube into the trachea, was made before the committee, may I beg of you to inform me by letter—

1st. Whether you believe the tube has been passed through the vocal chords into the trachea?

2d. Also whether the injection has been made through the tube into the bronchi, and if so, what in your opinion were the effects of this method of treatment?

3d. Whether, at the time referred to by Dr. Stone, in your opinion the tube was passed through the vocal chords into the trachea?

I remain, very truly yours,

B. FORDYCE BARKER.

Dr. E. R. Pulling, Resident Physician
to the New York Lying-In Asylum.

NEW YORK, June 19th, 1855.

Dear Sir, I have before me your note of the present date, in which you make some inquiries in reference to the introduction of the tube into the air passages, in my own case.

While I wish to shun the unfortunate position of a *partisan* in the discussion of the question now before the committee, I yet see no valid objection to stating such particulars as have a bearing on the subject of your note.

Dr. Green attempted to pass the tube into the trachea on three occasions. The first attempt was unsuccessful. The second was successful—the tube, I think, undoubtedly passing through the vocal chords, and into the trachea. An injection was thrown in on this occasion for the purpose of relieving a bronchial irritation, from which I was suffering. The effects following this operation were—during the first six or eight hours, an increased expectoration, the cough remaining about the same; at the end of this period, both cough and expectoration began to diminish, and for several days subsequently I found much relief from the previous symptoms. The third attempt at passing the tube, made in the presence of the committee, was unsuccessful. A result which, so far as I am capable of estimating its causes, was due to spasm of the vocal organs, induced by fatigue, and increased by the circumstances under which the operation was performed. Very respectfully yours,

E. R. PULLING.

To *Dr. B. F. Barker*, member of the
committee of the Academy of Medicine.

Enough has been said to establish the fact “that the operation may be performed by the dexterous surgeon with ease and facility.”

As to the safety of the operation, it is sufficient to say that it has been performed by Dr. Green in more or less patients daily for more than six months, and this, too, constantly in the presence of physicians and patients from all parts of the country. With the strong partisan feeling enlisted in this subject, if a single unpleasant result had occurred in his practice, it could not have been concealed. It would have been trumpeted throughout the length and breadth of the land. But as nothing of the kind has happened, the safety of the operation may be regarded as fully established.

3d. *The Therapeutic Results of this Method of Medication.*

No one fact is better settled in the science of therapeutics, than the effect of nitrate of silver on inflamed mucous membranes. The pathological condition of the mucous membranes of the air tubes, in chronic bronchitis and in the bronchi, leading to tubercular deposition, is equally well established. Most physicians accustomed to treat pulmonary

diseases, must have had in the course of their practice some such ideas as are happily expressed in the following quotation from Dr. Chambers, a distinguished physician of London, "While treating diseases in those parts of the mucous membrane which are sufficiently exposed to sight and touch, for the immediate application of remedial agents, there are few to whom the wish has not occurred that equal facilities were afforded of directly influencing the deeper seated continuations of the same fabric. The powerful remedies which restore so rapidly to health the conjunctiva, and the fauces, would probably act with equal quickness and success on the stomach or the bronchi, could we apply them rightly to the right spot and attack the local disease, without passing circuitously through the whole system."*

A priori, then, we should look for most favorable results from this method of medication as meeting "a general indication which the judicious practitioner will know how to avail himself of."†

The writer of this report has *abundant proof* that the results of experience *fully confirm* expectations founded upon analogy and inductive reasoning. He has availed himself of every opportunity to watch the effects of the treatment now under discussion; he has examined a large number of patients, has learned their commemorative symptoms, and has watched their progress from day to day. A report of this character cannot be burthened with a minute detail of individual cases. General results only can be stated. The use of the injections has uniformly been followed by a marked decrease in the cough and expectoration. A large proportion of the cases were those of chronic bronchitis. There were some of early and some of advanced phthisis. In all the cases of bronchitis, the patients began to improve as soon as the injections were used. Many of them recovered with a rapidity which I have never seen under any other treatment. In early tuberculosis, especially, when complicated with bronchial disease (as it usually is), this method of topical medication has produced the most gratifying results, diminishing the cough and expectoration, relieving dyspnoea, and allaying pain in the chest when present. In several prominent cases, the details of which at some future time will be given to the profession, the disease appears to be arrested. Time, of course, must determine this point. In some advanced and hopeless cases of phthisis, the injections have for a time greatly diminished the cough, expectoration, and irritation about the chest, and some of these

* London Lancet, Am. Ed., 1849, vol. 10, p. 29.

† The Path. and Treat. of Tuberculosis, by John Hughes Bennett, M.D., &c., p. 140.

patients and their friends have repeatedly declared that they invariably rested better after an injection. Many physicians of this city and from different parts of the country, will fully confirm the above statements, from their own observation. Some, among whom may be mentioned Drs. Bowditch and Perry of Boston, and Dr. Marsden of Quebec, have, to a limited extent, tested this plan of treatment in their own practice, with equally happy results, so far as their experience goes.

In conclusion, the minority of the committee would suggest, for the acceptance of the Academy, the following propositions :

1st. Direct medication of the lungs by means of catheterism of the air tubes, was first proposed and carried into effect by our associate member, Dr. Horace Green.

2d. The operation may be performed by the dexterous surgeon with ease and facility, and with perfect safety to the patient.

3d. The results of this method of treatment, whether it has been employed in bronchial affections or in the commencement of tuberculosis, have already afforded the most gratifying indications that practical medicine will be greatly advanced by this discovery.

B. FORDYCE BARKER,

of the committee, &c.

At its close, it was voted, on motion of Dr. Beadle, that the reports be accepted, and that the committee be discharged.

Dr. D. M. Reese said, that already the hour was late, and the discussion which must ensue upon the reading of the learned and able reports, would be protracted and exciting. Moreover, to enter into it intelligibly and safely, it was desirable that the members should have an opportunity to examine quietly and carefully these elaborate papers. He would therefore move, that all the documents submitted to the Academy be printed, and that each member be furnished with a copy.

Dr. Beadle wished to know if they were to be published as "proceedings of the Academy."

Dr. Watson said, the object of the Academy is to discuss the matter intelligently ; but, is it necessary to call them "transactions?"

Dr. Beadle thought they were such, and, if published at all, must be published as such.

Dr. Stone said, he desired to go into committee of the whole, and discuss the subject now.

Dr. Reese said, we have not the documents before us, and cannot

discuss them favorably or well. The hour is late, and we had better adjourn, allowing time for printing.

Dr. Reese's motion was carried, and after some discussion as to the number of copies to be struck off, the Academy adjourned.

PART VI.—EDITORIAL AND MISCELLANEOUS.

The Committee of the New York Academy of Medicine and their Reports.

After a six months incubation, this committee has made its report, or, more correctly speaking, its reports. They make a series of documents so singular, so striking, and of so much interest to the profession at large, that we shall make no apology for laying them before our readers. They are, however, so long, that to give them in full, we have been compelled to add an extra form of sixteen pages to this number; desirous as we were, of placing them before the profession together, and without the interruption of a month between the periods of issue. This, with the late day of the second meeting, will account for the slight delay of this number of the MONTHLY.

The accuracy of such an account of the proceedings, is a matter of great consequence. In order to avoid all error, we have in every instance but one, copied from the *original documents* themselves. That exception is Dr. Anderson's note, which he himself furnished to us, from memory, however, and it may not be the same, word for word, as that given to the committee. Its sentiments and ideas, in this instance all that is of importance, are undoubtedly the same.

We have been particular to state these facts, because a suspicion might be felt that these documents were garbled, or that by the turn of a sentence, the writer had been made to express other than his own ideas. We can conceive that many members of the profession will think it incredible that no change has been made in one or two of these reports. So careful have we been, however, that some errors of punctuation have been allowed to remain, and faulty grammatical constructions have also been untouched. An Editor's usual privilege to correct, has not been used by us, for fear we should misrepresent. The only difference, then, that can possibly exist, between those documents as we print them, and as they will come from the "Transactions" of the Academy,—for they print the reports,—must

be in these unimportant matters, unless, indeed, alterations should be permitted, which, of course, ought not to be, and probably will not. This preface seems to be necessary, that our readers may see that they may place full confidence in our account of all the papers written out by the different gentlemen before they were brought to the Academy. To enumerate them, they are, in succession,—“the minutes” of the committee, the majority report, Dr. Barker’s remarks the first evening, Dr. Anderson’s note, Dr. Stevens’ report, and the minority report. The account of the debate has been given with the greatest accuracy possible without the aid of a stenographer, and is believed to be full and correct.

In speaking of these proceedings, we are somewhat at a loss to know where to begin. There is so much to be said, there are so many things suggested, and withal our space is so limited, that we labor under the *embarras de richesse*.

But let us first be historical. This committee (and their reports will bear out our assertions) was appointed at the meeting of the Academy held last December. It was on motion of Dr. Willard Parker * that the investigation was decided upon, and he was made the chairman of the committee, by the president, who also appointed its other members. The report was made in June, a period of six months having intervened between the appointment and the report, and such a time as ought at least to have been taken. Few weeks were allowed to elapse (the committee were appointed Dec. 6th, and their minutes show that their first meeting was on Jan. 8th,) before they came together. At this meeting Dr. Barker notified them that Dr. Green would be glad to have the committee meet at his office at any time, after two days’ notice, and examine his practice and patients. They accordingly met there Jan. 13th, and again Feb. 1st, and on both those occasions Dr. Green, as we *know*, gave the fullest opportunity to each individual of the committee to examine his patients and to witness his experiments. Three other meetings were held at Bellevue Hospital, the last only one day before the committee reported, “to witness some experiments by Dr. Taylor.” Dr. Green was not present at this. At the other two, one Jan. 20th, and the other Jan. 27th, he was present, certainly a portion of the

* It has been stated to us that the committee was moved by Dr. Sayre, but if so, the writer’s memory is in error, and we can hardly believe that the then President, Dr. Joseph M. Smith, though a particular friend of Dr. Parker, would have violated so well known a parliamentary rule, as to make any one but the mover chairman of the committee.

time, perhaps the whole. From Dr. Parker's remarks we learn that Drs. Parker and Stone, with Dr. Taylor, whose name frequently figures in the minutes, and in the majority report, had, before the first meeting of the committee, assembled, and decided upon what they would consider as signs of the presence of an instrument in the trachea. To their Procrustean bed all facts were to come, or else to be considered "unsatisfactory." The minutes also show (and here let us heartily thank the majority for having them read) that an invitation was extended to the committee to visit Dr. Green's office, separately or together, whenever they chose, and to observe his practice and its results—an invitation of which, strange to say, not one of the committee but Dr. Barker availed himself.

The additional, though more significant fact in the history of the matter, may be mentioned, that at the first meeting of the committee to consider their report, held the 23d day of March, neither Dr. Anderson, Dr. Stevens, nor Dr. Barker, was present, the two last being absent from the city, (would it not have been courteous to have adjourned to another evening?) and though the character of the report was then decided upon by the remaining *four*, no intimation of its character, or of its having been decided upon, was made to Dr. Barker till two evenings before the Academy meeting, though during this interval he frequently met the other members, and for a time was met by the chairman daily, in consultation. Could this profound silence have been *entirely* accidental? So far, the history of the meetings.

The inquiry next occurs, to what extent did the committee exert themselves to investigate the matter? Did they leave any one stone in its place under which might lurk a particle of truth? Did they give evidence of an earnest desire to ascertain the truth, and to state it without regard to its effect on themselves or others?

In reply, we only state the following facts, confirmed in part by the majority reports and the minutes, and the rest can be confirmed by the truthful testimony of the committee themselves. Six meetings of the committee were held for experiments and observation. At these meetings, according to their own statements, they three times, at least, saw injections thrown into the trachea; twice by Dr. Green at his office, and once by themselves at Bellevue Hospital. The latter, the majority *say*, died, and they give a letter from Dr. Frothingham, who, we presume, is one of the young gentlemen who are assistants at that institution, in which he gives certain post-mortem appearances, alleged to be found in the lungs of the said dead man. Now

are the majority willing to assert that Dr. Frothingham is one of the best pathologists or microscopists in the city? Undoubtedly he is a most estimable young gentleman, but is he qualified to act as an expert at all in those investigations; and could not a better have *possibly* been found? We hazard nothing in saying that in those capacities he is entirely unknown to the profession of the city.

Still further, the committee should have been called to witness the autopsy; but so far as appears from the record or report, or so far as we can learn, not one of them was present. Certainly Dr. Barker was not, and was not notified of it. As certainly it would have been an act of *courtesy*, to say the least, to Dr. Green, to have invited him to witness the examination, and still no such courtesy was extended to him. On what authority, then, do the majority base their conclusion concerning this case? On such evidence, so far as appears (and we are authorized in supposing they have no other authority), as every scientific man must at once see is entirely insufficient, and this after the committee had decided to be guided only by what they saw with their own eyes. Dr. Barker has therefore adopted the only correct course, in ignoring this case entirely, in the minority report.

But supposing, for the present, that the majority had ground for knowing that this man had died soon after the committee had injected his trachea. They had seen two other persons injected in a somewhat similar manner, what was their duty in respect of them? Clearly to hasten at once to Dr. Green and ascertain whether or not a similar result had followed. But did they do this? *Never!* with the single exception of Dr. Barker. They knew, or had reason to suppose that Dr. Green was daily repeating the same thing, and yet they not only did not send him a word of caution concerning the fatal case, but they most religiously, shall we say, kept it from him, so that, till the majority report was read, he and his friends knew nothing of it more than rumor stated, though it occurred months before. We hasten to quiet any sudden anxiety of the committee, by informing them that as yet no injurious, much less fatal result, has followed his repeated injections. We also inform the majority that those two patients are now much better, one believing himself entirely restored to health.

But again. There is much point in the enquiry made by Dr. Gardner, at the first meeting of the Academy, whether or not the alvine evacuations had been examined to see if they contained any salt of silver, a point which the chairman of the committee said was not at all noticed. Now it was evident that Dr. Green was throwing decided quantities of nitrate of silver either into the air passages

or the œsophagus. The majority professed to believe that it was the latter, and still took no steps, made not the slightest effort to ascertain whether or not there was this confirmation of their opinion. They either had time enough to do it, or had not. If enough, they are culpable for omitting it; if they had not enough, they should have taken more, for they were under no limit in this respect.

There is another dilemma in which the majority have placed themselves. They assert that there are 92 per cent. of failures in efforts to introduce the tube into the trachea. Though we believe them to be in error, in fact, know they are—we adopt their statement for the moment. Now it can be shown “as clearly as the noonday sun,” to use a favorite expression of the chairman, that most, if not all, the patients injected by Dr. Green, are better, if not well; except in those cases, in which the remedy was used only as a palliative, which purpose it answered. Are the committee prepared to sustain the position that injections of nitrate of silver into the œsophagus have this remedial power? It is not other auxiliary treatment, for that is such only as has before failed when used alone. The stubborn facts are in the way, that the patients are much better; the majority deny that the injection goes into the trachea even. The deduction is for them inevitable, that injections of nitrate of silver into the œsophagus are very beneficial in pulmonary disease. May they enjoy their position on that horn.

But our limits absolutely forbid farther remarks, and much that we desired to say, must be postponed at least another month. We ask for the documents a careful perusal. Let the minutes be carefully scanned, and all the reports as carefully. Let it be observed how the committee's decision of “unsatisfactory on account of the absence of *appropriate* symptoms” is made to disparage otherwise successful experiments. Let the whole spirit of the minutes, and of the majority report, be studied without prejudice, and without partiality, and we have no fear of the result. All that Dr. Green, or that his friends ask, is investigation of the *truth*. It is on his side, and he courts inquiry. But it is candid, impartial, unprejudiced enquiry that he seeks. Not efforts to support a preconceived opinion, or to gratify an old hostility. Scientific men, not partisans, he asks to be his judges.

In conclusion, we only add that we have carefully avoided all personality, and, if possible, shall continue to do so. That the same course may be followed by the members of the Academy, in the discussion which is to take place on the third Wednesday of July, we

sincerely hope. Of that discussion, we shall endeavor to inform our readers, in the next number of the MONTHLY.

ITEMS.

The College of Physicians and Surgeons,—that is, the “Crosby-street School” of this city,—have commenced a new building on the corner of Twenty-third street and Fourth avenue.

CONTINUED LACTATION OF CHILDREN BY SICK MOTHERS.—Alf. Mercier quotes the following cases : in one instance, a mother sick of typhus fever continued to nurse her child fourteen months old, without injuring it. In another case, a mother sick with yellow fever continued to nurse her child eleven months old, also without bad effect. —*Presse Medicale de Paris.*

M. Guillot remarks that a disease beginning in the last stages of gestation, or the first after confinement, is no indication for the interruption or discontinuance of nursing.—*Presse Med. Belge.*

THE CONDUCT OF THE WAR IN THE CRIMEA.—A correspondent of the New York *Evening Post* gives the following specimen of the manner in which Mr. Roebuck's Committee prosecute their inquiry into the conduct of the war, and compel the delinquents to own up :—

“Was to-day at the Committee of Inquiry, Mr. Roebuck's committee. The proceedings are entirely public. To-day two of the Crimean medical officers were on the rack, and pretty disclosures they were forced to make, more to the edification of their hearers than to their own delight, for they proved themselves to have been guilty of the grossest negligence in their offices. One of them was the inspector-general or deputy inspector of the hospitals at Scutari, whose duty it was to go about and see that everything connected with this department was in a proper state—and imagine this man saying that the hospitals were in a cleanly condition, and writing to Lord Stratford de Redcliffe that they had everything needful for the comfort and sustenance of the patients, at the very time that the hospitals were in the most disgusting and filthy condition, and men dying in them of mere exhaustion ! The Committee pumped them both dry in a manner which was delightful. They both hemmed and hawed, and tried to get out of the mud the best way they could ; but little Roebuck put it into them in a way they hadn't been accustomed to before, snubbing them at a most prodigious rate. ‘Why can't you answer that question in a plain manner? Did you, or did you not?’ ‘No.’ ‘Well, then, say so at once.’ ”

M. JONAS, of Berlin, cautions against the use of artificial nipples, made of vulcanized rubber, that is, made of India rubber prepared with sulphur, as they cause exhausting diarrhœa in the child.—*Med. Centr. L.* Aug. 12.

CASES OF LONGEVITY IN NEW HAMPSHIRE.—The following persons lived to be one hundred and ten years of age or upwards. Samuel McGuinn, of Andover, who died in 1845, 110 years; William Scoby, Londonderry, 1754, 110; John Collamore, Kensington, 1825, 110; Jenney Kennison, Brookfield, 1840, 110; Samuel Welch, Bow, 1823, 112; Robert Macklin, Wakfield, 1787, 115; William Perkins, Newmarket, 1732, 116; Duncan McNaughton, Moultonborough, 1831, 117; and Zacheus Lovell, Nashua, 120. The date of this last death we do not know. Probably he was the oldest person that ever died in the State.

DEATH OF AN AMERICAN SURGEON IN THE RUSSIAN SERVICE.—The Providence *Journal* records the death of Dr. Isaac Draper, Jr., an American Surgeon, who has been employed in the Russian service, and who was the writer of various interesting letters, which from time to time have been published in the columns of that newspaper. He died at Sebastopol, on the 20th of March, of typhus fever, after an illness of four weeks. His funeral was attended with all the official marks of respect. The *Journal* says:—"Dr. Draper was the son of Isaac Draper, of South Attleborough, Mass. He was 32 years of age, and graduated at Brown University, in the class of 1844. He was a man of fine talents and education, improved by travel and study abroad."

PUNCTUATION.—The omission of a single comma will oftentimes alter or materially modify the meaning of a sentence. An omission of this kind in an interesting article about the inauguration of the new hospital building in New York, makes the writer state that "an extensive view is presented from *the fourth story of the Hudson River!*"

THE AMERICAN MEDICAL MONTHLY.

AUGUST, 1855.

PART I.—ESSAYS, MONOGRAPHS, AND CASES.

Practical Lectures on "Military Surgery." Delivered at the New York Medical College, East Thirteenth street, by ISIDOR GLÜCK, M.D., Chief Surgeon to the Hungarian (Vilmos) Husars, and to various Hospitals during the late war in Hungary. Introductory. Delivered 30th of June, 1855.

GENTLEMEN : History records the deeds of nations. Gallantry and courage evinced by them is not soon forgotten, unrecorded and unknown as may pass many a heroic soldier's activity. The military surgeon, however, often painfully witnesses the hard struggles, of which the result proves, if not fatal, at least dangerous, to many a warrior.

However enthusiastic the surgeon may be, through innate love for his country, or other reasons touching him as a citizen, his duty as surgeon demands the utmost care for *friend and foe* alike ; hard as it may be, and really is, to divest himself of patriotic feelings. It is but natural that a soldier, if wounded, whether friend or foe, should have reason to claim, by rights of humanity, equal attention and sympathy. Helpless as he is, he deserves our interest to the greatest extent, however unjust his

cause, however wrong the motives that engaged or forced him to take up arms.

On the field of battle, as well as in the hospital, the severity of the case met with, has to decide on the preference of attending, if friend and foe are mixed together and equally accessible.

In the first instance, the sick or wounded soldier needs consolation ; and encouragement that comes from the surgeon's lips, reacts more beneficially, when proffered in the soldier's native tongue.

Presence of mind, calmness, assurance, conservative boldness while operating, are attributes necessary to the military surgeon, who, above all, must possess a thorough medical education. Although the field of battle is the best surgical school, it is so but to those who are not only perfectly familiar with the principles of surgery, but know at the same time *what* and *how* to observe, in order to be useful in the moment, and to turn their knowledge to practical utility.

Military surgery differs from domestic or civil surgery in many points of view. Regardless of the severity of the wounds which mostly occur on the field, the circumstances of war aggravate the treatment, and have to be consulted to a great extent. Indeed, operations have often to be performed sooner, or modified and delayed altogether, on that account. Whereas in domestic surgery the welfare of one has to be considered, the military surgeon must not lose sight of the influence on the plurality, and he is more justified in bestowing greater care upon those who—if soon discharged from the hospital—may render further services to the country or their cause, than to neglect them for the sake of trying "good luck" on absolutely hopeless cases ; he should, however, not withhold that attention that humane feelings dictate, even if death be imminent and certain.

The duties of a military surgeon are too numerous to be mentioned here, and are mostly suggested by circumstances of war. They are in many respects different in time of peace from what they are during war. With slight differences, the duties of the military surgeon during peace are almost like those of a civil

surgeon, while the duties during war are peculiar, and deserve therefore an especial and closer consideration.

The division and subdivision of the medical staff is a conventional one, and different in almost every country.

Among the principal duties of the military surgeon during war, is

Recruiting.

Able-bodied men from 5, $5\frac{3}{4}$, to 6 feet in height, are enlisted out of those who present themselves, or are invited or compelled to serve. The height is of comparatively little value,—indeed, many tall soldiers not only look awkward in their movements, but really are, on horseback, at least, much more so than shorter ones; I admit, however, that as a corps, they present an advantage over troops of smaller men, and thus their value increases morally. Neither too short nor too tall, but middle-sized men, sufficiently strong, should be chosen, provided a choice is left, as every able man is not proper for such service. A moment's reflection will convince the surgeon of the necessity of the soldier's enjoying a strong constitution in order to bear those unaccustomed exertions that await him. Exhausting marches, bivouackings, irregular food, and protracted manœuvres, can certainly not be borne by sick or feeble men.

Usually the recruits present themselves naked before a military commission, consisting of officers and the surgeon. The approaching recruit has to be observed in his totality, as many defects are easier recognized at some distance, as squinting lameness, or differences of size in the halves of the body, as shoulderblades, etc. When near, the recruit has to be examined thoroughly, from top to toe. Beginning with the head, the defects will be made apparent if any deformity exists in the skull appreciable to the sight or the touch.

The organs of sight and hearing have to be subjected to an examination, as both are very important to the soldier. A defect of sight will exempt the man, and render him as useless as a defect in hearing. To aim and execute the orders, he must be in possession of tolerably good eyes and ears. The mouth has to be examined: a breach of continuity of the lips (hare-

lip), or cleft palate, would not only render the soldier a subject of constant annoyance to his comrades, but unfit for some parts of the service. Like the want of incisor teeth, it would make difficult the biting off of cartridges, to enable him to load the musket. A breach of the palate would render the speech unintelligible, and thus the soldier would be unfit for delivering messages. Defects around the neck, as strumous or other chronic swellings, may render him a constant patient in a military hospital, but no soldier.

The examination of the chest, has, together with the heart, to be done by the aid of auscultation and percussion. It is a mistake to believe that tall men must necessarily have a long or sound chest. I took particular pains to examine tall soldiers, for the sake of arriving at the fact, and I am satisfied that in many, if not in the majority of cases, in tall men the length of the limbs exceeds the comparative length of the chest, or rather, the chest is no longer than in shorter individuals. When, in May, 1849, seventeen recruits, all of whom were not less than six feet in height, presented themselves, although well developed peasants, I took particular care in measuring the chests, the lengths of which did not exceed that of men from 5 to $5\frac{1}{2}$ feet in height. Not less attention must be paid to the abdomen, to recognize such defects as may be likely to prevent the recruit from active service. The genital organs have to be considered. The limbs have to be examined in respect to their comparative size and function. The recruit must be ordered to walk, and his movements watched. Although the private soldier is not required to have great mental capacity, and often acts better, and suffers more, the less he knows what he is about, it is still important to ask questions in order to convince ourselves of his intellectual faculties, as a madman would be as little admissible as a stammerer. I used to order them to walk, undressed, up and down the room, and to make active and passive movements with their limbs, by which many defects could be traced and recognized. During the war in Hungary, in the different periods the choice of men to be enlisted was entirely dependent on the necessity of the moment. When the war began, only picked men, who possessed the best constitutions, were tall, and strong, and good-looking, were enlisted,—

the more so, as the patriotic spirit awakened in the youths of Hungary, was sufficiently roused by the powerful instigation of national pride, and their number alone would have been sufficient to form the battalions voted by the Hungarian Diet.

Students from eighteen to twenty-four years of age, lawyers, medical men, and clergymen, not only in their capacity as such, but many, with sword in hand, actually contributed to the glorious attempt of liberating the country. Thus it came to pass that the Hungarian army mustered, besides healthy and strong men belonging to the working classes, morally strong and intelligent men, in whom the moral fortitude replaced the physical strength, and thus enabled them to bear hardships with endurance. Valueless as a soldier may be when weak, his moral strength renders him more fit for a protracted war, if he possesses such qualities as keep alive in him the idea of justice of his cause, and the hope of ultimate success, even when encountering, or opposed to, an outnumbering army. I witnessed more than one instance in which, by their moral courage, a single regiment of our Hussars, or battalion of our Honvéds, not only fought a battle destructive to our enemies, but actually drove, in their wild enthusiasm, a ten times stronger *corps d'armée*, for days, and chased them so far that the meals prepared by them were in great haste left for us, as a reward of our unceasing exertions. When marching towards Vienna, our *corps d'armée* was thus feasted. I well recollect gaining land when the triumph was heightened by the meals, well prepared on Austrian ground. The retreat at that time, ordered by the treacherous Austrian, Gen. Moga, then in our service, was the death-blow to Hungarian—and perhaps European—liberty! Görgey succeeded him!!

No better proof is needed, as to how necessary it is to keep troops in good spirits and enthusiastic, than the fact that it reflects beneficially on new comers, who have to replace the sick and wounded, if not the dead. The 9th battalion—remarkable for its extraordinary heroism, called *vörös sapkás* (red cap), noted, and not soon to be forgotten by many an Austrian and Croatian soldier, if he luckily escaped with one wound,—was the terror of the opposing armies, so much so, that they were often

brought one hundred miles or more in carriages in order to take a certain place of importance. Their prestige was so great, that by their presence it was calculated, not with probability, but assurance, the possession of a height, village, or space to be gained, and the further plans arranged accordingly. Although the loss was always a great and terrible one,—death almost sure to one part of them, on account of the great task to be executed,—yet no battalion entered with more resignation, did its duty better, and was more ready to die, than the 9th.

To give you an instance of the deliberate coolness of such young men as belonged to this battalion, I will briefly state to you the history of one case, to which I shall take opportunity to revert, on account of its peculiarity, when treating of gunshot wounds in the thigh. D. P——, a good-looking red cap soldier, 24 years of age, received a wound in his left thigh, from a bullet discharged from the rifle of a barbarous serb, who stood on the top of a low church tower, and subsequently fell motionless to the feet of the wounded Honvéd. The red cap Honvéd, exasperated at the destruction of the enamelled cross he carried in the pocket of his pantaloons, as a sacred reminiscence of his mother, fought like a lion, after having received the shot, alternately bayoneting, loading, and discharging. For his wound he cared little. The battle that began at 2 o'clock, and about four cost him a wound, found him at nine in the morning yet among the last on the field. Was it not for his cross, that he looked at immediately, and found an arm of it shattered, he would not have been aware of his wound. When the battle was at an end, he repaired to the ambulance with his swollen limb. The bullet could not be found, in spite of several attempts. The wound, however, healed up; after nine weeks, he wore his red cap again in rank, and was promoted to the rank of officer. He paid little attention to his leg, and it gave him no trouble while the war was raging. In his fortunate escape to England, his wound broke open, and passing some time in the hospitals of the various countries he travelled, the bullet was several times looked for, but not found,—he left the hospitals with the bullet in his thigh. While a refugee in London, he suffered, off and on, until tired, when he resolved to have it cut out. One day, much annoyed by the pain in his

thigh, he called at my office, and not finding me in town, he applied to one of the surgeons of the day, who, after examination, could not ascertain the situation of the ball. Directing him, with a note, to me, the surgeon requested me to assist him, and for that purpose to bring him to the hospital he had the charge of. With this view, I repaired with my countryman to the hospital, where, in the presence of the pupils, I explained that my comrade, aged 24, had been in forty-nine engagements, and in one of these battles received a gunshot wound in his left thigh. A laugh of admiration by the pupils startled my comrade, who, at that time ignorant of the English language, feared to appear ridiculous, and on no account would submit to any further trial. Walking home, the pain in his thigh increased, and he decided on having the ball cut out at once. He lit his cigar, ordered a pail of water, undressed, and laid down in bed. A penknife, used for cleansing his pipe, he seized, for want of any other instrument, stuck it along the cruralis muscle, two inches from the knee joint, and, feeling with his finger, thrust it to the very bone, wherefrom he drew it upward, forming, most deliberately, a wound two inches in length, which admitted his finger to search for the ball, which he luckily extracted, after some considerable searching. Bandaging his thigh, he applied cold lotions, and was well in a fortnight. Thus the red-cap soldier operated upon himself. The places of those lost in the noble pursuit, were speedily filled, as many were anxious to belong to that corps, and to be enlisted into it, and the spirit of the 9th battalion was transfused into the new comers, who constantly in fire fought as bravely as those who originally formed it. Only six are alive out of the twelve hundred who composed it,—one of those six is the self-operating red-cap hero.

Feigned Diseases.

From cowardice, or other material interest, perhaps even from sympathy with the enemy, some feign diseases, and thus excuse themselves from being enlisted. The most common are otorrhœa, produced by onions, and amblyopia, or rather, enlargement of the pupil, produced by belladonna or stramo-

nium. Some feign stammering, and deafness ; others mutilate themselves, rather than join the soldiery ; swelling of the testicles, and emphysema, produced by blowing in air, is a favorite trick of some poltroons. Low diet and solitary confinement for the purpose of being watched, seldom failed to bring all such persons to confess the deception, and to acknowledge that remedies were used for feigned diseases ; and they soon preferred the soldier's life in the open field.

In many countries, as in Hungary, the examining surgeon is responsible for the selection of the men, and has to defray the expenses for those who for some reason or other are rejected.

I remember an instance, in which out of two thousand men I had recruited, eight were rejected, with the intimation that they were useless and inadmissible ; and that, therefore, the expenses the government had incurred on their behalf (by transporting them to the depôt where they were to be equipped and drilled, and by maintaining them for nine days), would be taken from my pay. True it is, they were rather remarkable for their shortness,—one of them, even, was one-eyed ; others, short-chested or humpbacked. But my reply, stating that those individuals were enlisted with a view of making them useful in their profession as musicians (which they did not mention, from the desire of being otherwise actively employed,—wherefore they presented themselves voluntarily), not only insured my pay, but secured me a very good reception, when afterward visiting Gen. K—— (then colonel of the 24th Infantry Regiment), while the 24th battalion was singing by the plaintive notes of those very musicians, who alternately made them dance and sing, and thus kept them in good spirits, although they had been waiting for the last forty-eight hours for meat to come,—and as its arrival was rather doubtful, on account of the counter order that an anticipated battle produced, music and dancing supplied the place of dinner and supper.

To keep a good spirit in the Army, is necessary.

To keep a good spirit in the army is one of the most important points to be gained by every leader, who thus increases

the moral confidence and physical strength of his forces. Thus Kossuth's enthusiastic speeches, made when the army faced the fearful enemy, on the frontier of Austria, filled every soldier's breast with so much courage, that he did not doubt of success, although convinced of the enemy's superior numbers. The appearance of a popular General on the field, was often sufficient to array a dispersed *corps d' armée*, and thus to win the battle.

The Accoutrements.

Proper clothing exerts a beneficial influence, physically and morally. In its physical aspect, it may be injurious in many ways,—too hot, too cold, too tight, or too loose. If too tight, it impedes the necessary movements; if too loose, it embarrasses the manual exercises. No regular standard, however, could be presented, as the use of it depends upon the costume and habits of the various nations. In the Hungarian army the dress was worn tight, but sufficiently comfortable to allow all possible movements. With the exception of the hottest days, the cavalry, as well as the infantry, preferred it to a loose garment. With the infantry, in Summer, a loose garment fastened around the waist, is preferable, on account of the heat while walking, to which the cavalry is less exposed.

The cover of the head is injurious to health, mostly on account of its weight, and is worn according to clime and country.

The soldier's dress, if broken, torn, or insufficient, and not adequate to the time of year, morally exerts an injurious influence over the army, as it is apt to betray the bad state of the finances, and thus diminish the enthusiasm of the soldiery.

Portable Kitchen.

Good food and rest is as necessary to the soldier as adequate clothing. His physical strength will soon give way, if compelled, as it often happens, to serve in countries foreign to him, where he is unaccustomed to the climate, if it exerts an injurious influence over him. It can scarcely be expected that the soldier, fatigued by marching or fighting, should feel equal to the exertions of preparing his food,—he prefers to rest and sleep,

without food, although prepared meals would be most acceptable, and render him the next day more fit for performing the duties that await him. The use, therefore, of portable kitchens is of the greatest value. In the Prussian army there are kitchens constructed on four wheels, and drawn by four horses. Recently a new model was devised by a late officer of the Hungarian army, and constructed in such a way as to prove more practical. It is on two wheels, and may be drawn by one, or two horses in tandem; it can be easily carried over trenches, hills, and mountains. One man, ascending behind, while on the way following the troops, may be continually preparing meals, so that the soldier may be served at any time indicated. The simplicity of its construction renders it very valuable.

Tents—Barracks.

Whenever practicable, soldiers ought to be protected from the inclemency of the weather,—rain, heat or cold, and changeable temperature,—by tents, or barracks. The billeting, however, of a great number of soldiers in small rooms, in fine weather, produces more mischief than passing the night in the open air.

Ambulance Field Hospitals.

Certain arrangements are necessary to facilitate the surgeon to render this service to the soldiery, and to enable those in need of it to receive it promptly and efficiently.

In anticipation of an engagement, we usually selected, in Hungary, a place for carrying on our surgical operations. Whenever it was practicable, we chose the vicinity of a river, a grove, a single house, or the last house of the next village or town, or a railway station; but according as the army advanced or retreated, we were compelled to do the same, and change our position. Not unfrequently the cannon balls would far outstretch their mark, and fall among the wounded men, taking a life already placed in jeopardy, or maiming or killing those in attendance on the wounded; or perhaps the chosen house was burned with rockets, while the wounds were being

dressed, as in the engagement of Csorna, and other places. At Moor one of our surgeons was killed and another received five deep wounds in the scalp while performing his duties.

In Hungary and Italy, during the later period of the war, a certain number of soldiers have been selected from each regiment, and put under the command of an officer (sanitary company), in order to form, together with a number of surgeons and assistant surgeons, and wagons for carrying the wounded men, and cars for instruments, bandages and remedies, the so-called ambulance, which has to exist with every *corps d'armée*. While marching, it follows the first brigade. With the beginning of a fire or a battle, a special place has to be looked out for, and marked by a white flag, or other signal. From this spot the men are sent to pick up the wounded, and bring them to it, where the surgeons are in attendance, to put dressings on, or, if necessary, immediately perform some operations, and care for the transportation of the wounded ones. Infinitely greater are the advantages for both soldier and surgeon, if such sanitary companies and regular ambulances are established.

It cost me a great deal of trouble to convince staff officers and commanders of this fact, who would or could not be enlightened on this point. I never did regret my exertions in that behalf, knowing its importance.

On my application for hussars necessary to form an ambulance, I was told to wait until wounded soldiers needed such men for assistance.

That the heat of battle is no moment for the selection or formation of sanitary companies, is self-evident, and was occasionally too convincing to be denied.

The wounded soldiers have to be carried off by men, between horses or mules, and in carriages expressly fitted up for that purpose. The latest improvements made for the greatest comfort of the wounded, are now used in the Crimea. Of these, I will speak on another occasion.

Arms.

The surgeon's mission being to attend to the injuries inflicted by various weapons, it is necessary that he should be, if not

familiar, at least somewhat acquainted with the arms in use—the more so as the surgeon himself may be called upon to use some of them in self-defence, if mixed up with the scuffle, as often happened during the war in Italy, and particularly so in Hungary, where the surgeons wore the same uniform as the other officers in the army, with an additional white crape around the left arm, for which distinction the enemy little cared if he got hold of some of us.

As in the formation of a wound, the nature of the weapon, the projectile, its consistency, size, and form, the velocity and power with which it has been thrown, the angle under which, and the distance in which the missile was sent, has to be considered ; and as further, the nature of the parts to be pierced, the elasticity of the textures and organs must be regarded, it may not be *superfluous* to enter into the construction, and explain the properties of some arms now in use, before reverting to their various effects on the different parts of the body.

I do not pretend to give you a history, or a systematic division of them, but deem it sufficient to show you some of those used in the early war, and improvements on guns as used now in this and other countries.

I have the opportunity of showing you here, some Turkish and Circassian arms, belonging to a friend and countryman, who, while detained on Turkish ground, made a beautiful collection of the rarest antique arms used in the Orient.

The *kama*, straight and curved ; *handsar*, Turkish and Circassian, both used at the same time for a support to the long muskets of the Turks and Circassians, while they are firing.

Tserkess sword, pala, and knives. This is the Turkish rifle, simple in its construction, having the lock outside altogether.

The Turkish army is now, however, provided with the same arms as used in the French army.

The arms used in different countries are of different forms, size, and weight, thus the swords, sabres, muskets, bayonets, pikes, are variously modified in the different armies.

Substances which injure men by means of firearms, are pointed lead, round lead, musket balls, new pyramid balls, miniè balls, balls with a ring attached to them, chewed uneven balls, marble balls, cut lead ; pieces of iron ramrods, cleaning rods, wood rods,

which are fired out of pistols, muskets, musketoons, carbines, rifles ; larger balls (1 ounce), out of muskets, or $1\frac{1}{2}$ or 3 ounces of weight, in various numbers, out of light, sometimes out of heavy guns.

Human ingenuity contrived to render the missiles more formidable, by combining poisonous materials with them. Thus balls were immersed in sublimate. The hollow of pointed globes was filled with poison. The serfs hired by the Austrians against us, fired two balls connected with an iron wire, wound spirally ; the injury of which was immense, as not only the hot balls were carried with a centrifugal force towards the men, but in their course were kept together by the hot wire, which, running through the soft parts, inflicted a formidable extended wound. Sometimes copper wires are carried through the bullets, in order to produce by their oxidation, effects of poisoning, which, however, have been less noticed, as produced by the later means. Circassians use small copper balls out of their long muskets.

The Rifle and the Musket.

The rifle consists of the stock, the barrel, with the breech, the lock, and the ramrod. The lock consists of the plate, the cock or hammer, and the nipple or cone, to which percussion-caps are attached ; or, instead of those, Mainard's primer, calculated for thirty-six shots, is fixed. The French minié rifle is used in the Turkish war. You see it here, together with Sharp's breech-loading and self-priming rifle. The minié is about being introduced in the army of this country. The troops lately sent West, were provided with Sharp's rifle. The simplicity of construction, rapidity of firing, and great range, with perfect accuracy, is commending it. Whether it is as safe as those loaded at the muzzle, is yet to be determined.

The musket used by British soldiers to discharge the 16-to-the-pound ball, is said to be three or four pounds heavier than the one lately invented for carrying 20-to-the-pound, while sixty rounds of 16s weigh three-fourths of a pound more than the same number of 20s.

The advantage of the diminution in weight, is obvious to

every military surgeon, who, during marching, must have observed not only the fatigue, and exertion of a soldier to walk, during heat, under the heavy load of his accoutrements, but often, even painfully, witnessed the impossibility of some soldiers to march on under the fifty or sixty pounds that their equipage weighs.

One of the greatest improvements made in firearms, is the construction of the parts constituting it by machine, so that every part may fit to different muskets or rifles. The superiority of the principle on which arms are manufactured in this country, is acknowledged by the fact, that the British government sent out here by act of parliament, a commission, which after many trials and experiments, gave orders in Springfield, in Hartford, and in Windsor, for constructing the machines, which are to be carried to England, in order to manufacture by them the arms of their model, and even the armory master of this country, has been engaged for that purpose. One of the trials consisted in stripping 100 muskets, taken out of the racks in Springfield, and the subsequent speedy adaptation of the parts of the different muskets to which they fitted perfectly. The practical advantage of this plan, will be recognized, if we consider the total loss of many shattered or injured arms for immediate use, if the parts do not fit each musket; whereas the greatest advantage is afforded, if the parts are gathered together after a battle, while the wounded and dead are cared for, and thus the remnants suitably put together, are made useful again. The barrel and ammunition ought to be of the same calibre, in the different portable fire arms, or it may happen as it did in Hungary, that a battallion may be provided with shot that does not fit the barrel, and thus the soldiers be exposed to the enemy's mercy, in spite of his arms and ammunition.

Bullets—Balls.

As for the bullets mostly used, two forms are the principal ones, the *spherical* and the *conical*. They both vary according to size, the latter varies also according to form; the conical ball may be short or long, with a smooth or grooved base, pointed like the Swiss and American ball, or more obtuse, like

Pritchard's ball. The *minié* ball is oblong, with a conical point, and has in its large extremity a conical cavity, which extends from one-third to two-thirds of its length. Into the orifice of this cavity is fitted a cup made of sheet iron, which is driven by the powder into the cavity ; the ball is thus spread open and slugged, or made to fit perfectly the spirally-grooved rifle-barrel. A rotating motion is given to the ball, and a certainty of direction. The windage being prevented, less powder is needed, and less time is required to load the rifle, as no ramming is necessary, since the powder itself slugs the ball.

According to Col. Henningson, who is one of the best authorities on this subject, as well as on weapons in general, the ball will often turn in its course, and arrive with the large surface on the target, and thus cause an immense breach of continuity.

Espingole.

The Danes used, during the late war, two kinds of *Espingole* balls, a heavier and a lighter one, the latter of which was of the size and weight of an ordinary musket ball, and in its effect similar to the conical ball, which shape it had. The *Espingole* balls were sent out of a gun with a long barrel (*Espingole*), rapidly following each other, while the *Espingole* was turned like a fire engine in different directions. The balls being perforated through all their length, the fuse contained in the canal of the ball burned in front, and thus successively arrived at the powder behind.

It is commonly thought that the *minié* ball is more dangerous than the round bullet, on account of its shape, which is calculated to produce more mischief by penetrating easier. This impression is not altogether correct, as the contusion caused by the round bullet is often of more serious consequence than the punctured or chance wound produced by the *minié* ball. Although I am ready to admit that in some instances a complication of consequences may exist from punctured wounds, it will still more often be less dangerous than the contusion effected by the round bullet. The round bullet will more rarely pierce the

bone without shattering it, whereas the conical bullet will often cut its way clear through it. On the other hand, it may happen that the conical ball will turn in its course, and by its large surface strike the bone and shatter it. But the conical ball will easier evade the bony and hard structures, by being deflected, and entering the soft parts, will lacerate them easier, without causing so great destruction as the round bullet. If the velocity is diminished, the conical ball may do more mischief than the round one ; but at an equal speed, the conical one will, under similar circumstances, not always be more injurious.

This question, however, is not yet settled, and the nature of the injury depends upon many other circumstances also.

The pyramidal ball is calculated to be sent to a greater distance with greater accuracy.

It has been asserted that a round ball will produce a round opening, while a conical ball will cause one of the shape of the large letter T ; but this is not always the case, as the round one may produce an opening of the shape of the letter T, and the conical ball a round one.

Gunpowder.

The power of the igniting gunpowder, is produced by the sudden development and extension of powder gas, which in a high temperature gains an elasticity. The powder-gas by its tendency to occupy a greater space than it did when bound in a solid substance, seeks to overcome the impediment. Experiments have shown, that by the formation of gas, a space 5,000 times larger is occupied than that of the powder when in solid substance ; this, however, does not take place with the usual species of arms, and on account of the imperfect combustion of the gunpowder, only a 2,000 or 3,000 fold atmospheric pressure is perceptible.

The impediment, opposed to the expansive powder, and the slower or quicker ignition or combustion of the powder, exerts an influence on its force.

Gunpowder consists of nitre, sulphur, and charcoal, in various proportions. After combustion, we observe, as remains, the *powder mucus*, which is formed out of the foreign parts admixed

with the ingredients of the nitre and sulphur itself, which hardens quickly in a warm temperature, and remains viscid in a humid temperature. The force of the compressed atmospheric air suddenly set free by wind-muskets and wind-guns, is seldom used now-a-day. The wind-chamber, where air is pumped in, compressed, and detained, until all at once it is eliminated by a *ventil*, to carry with celerity the projectile, forms the essential part of them.

The gun-cotton recently invented by Schönbein, surpassing in application the effect of the gunpowder, was to be substituted for it. Although by a quarter part of the gun-cotton, a force is developed equal to that of the powder, still its introduction meets with objections and obstacles, and renders it impracticable, which diminishes its value.

Recent experiments prove, that every musket or species of arms burst, or is rendered useless after the use of 400 loads, some even after 200, which most likely is effected by the force of the suddenly developed gases, and by the *formic acid*, formed constantly with every shot, which injures the barrel.

*Cannons.**

Cannons of different sizes and calibre, are used, together with Howitzers, and the newly constructed Lancaster guns, now committing the greatest ravages in the Crimea.

Sometimes wooden guns, being easier to be made and transportable, are used, for want of others. Thus, among the mountaineer Wallachians, was one (Motz) notorious for his courage and strength, who acted as a stand to a wooden gun, which was often fired while it rested on his shoulder, on which it was balanced and adjusted. On one occasion, however, the gun burst, and carried off his shoulder, together with his head.

Cannon balls vary in size and weight, from 1 to 32 pounds and upwards, the heavier ones being mostly employed at sea,

* In the United States are used : Guns—Field, 6 and 12-pounders ; Siege and garrison, 12s, 18s, and 24s ; Seacoast, 32s and 42s. Howitzers—Mountain, field, and garrison. Columbians. Mortars—Light, heavy, stone mortar, cohorn, epronvette.

or in breaching batteries, and the smaller ones in engagements in the open field.

Grapeshot consist of small iron balls contained in canvas bags, in which a circular wooden bottom is inclosed, with a spindle passing up through the centre of the bag, and round this the balls are disposed and secured by means of a cord, so as to have some distinct resemblance to a bunch of grapes.

Canister or *grapeshot* consist of the same description of balls contained in cylindrical cases of tin, closed at either extremity by circular pieces of wood ; both the latter descriptions of missiles are so constructed, as to fit the calibre of field-pieces, from which they are discharged.

Shells are large hollow spheres of iron, loaded with gunpowder, which may act either in their entire form as solid balls, or subsequently by the explosion of their contents, and their subdivision into numerous splinters, by which their ravages are greatly extended.

The Csikós.

In a revolution, or even in regular war, it may happen that no time is left for drilling, and the immediate assistance of some part of the population being necessary, it naturally follows that the weapons most accustomed to will be used on such occasions. Thus Kosciusko achieved his first glorious victories mostly through the men provided with sickles. Guerilla bands were organized in Hungary to infest the enemy continually with the most different kind of arms and weapons.

Among the weapons used during the war was one kind, exclusively handled with the greatest advantage by the regiment called Csikós. Those men came forward on Kossuth's powerful appeal of, "the country is in danger." Although by nature tough, and leading, as cattle drivers, a solitary life, they are a set of men with the tinge of wild poetic feeling, and enjoy nothing more than melancholy plaintive songs, that strike peculiarly even natives. *En masse* they voluntarily repaired to the different recruiting places for being enlisted.

As no time was left for their being drilled, and they were in

want of other arms and the necessary knowledge for using them, they fought with their own weapon, called "ostor;" which consisted of a handle, measuring about one-half a yard, to which was attached a lash, from two to five yards long, terminating in a wire measuring from four to six inches. This weapon was used most effectually by them, to the greatest vexation of the Austrian cavalry. In a wild run on horseback, it was calculated to injure the face of the rider and of his horse, from a distance; and before the enemy could use his arms, it was thrown around him, and being unable to respond to such weapons, not being accustomed to them, some part of his body was strangulated, and by a rapid movement he was torn from his horse. Often satisfied with the prize of the horse, they allowed the enemy to take to his heels, knowing that in some hospital he would remember them for their saluting him manually.

A hussar sword was soon substituted for this kind of weapon of their own, and their name, after having been drilled regularly, changed for Hunyady *Hussars*.

The Plan of these Lectures.

I do not propose to confine myself to my own experience, but consider it more advisable to bring before you facts, established by the long experience of the celebrated surgeon of the peninsular war, Guthrie, and by other eminent surgeons, who, during the different wars in various countries, have had the opportunity of observing, and the capacity of communicating instructively their observations. I will revert to the important points discussed, and to some even settled, by the surgeons engaged during the strifes and fightings between the Danes and Holsteiners; and will mention the inferences drawn by French surgeons from their experience during the different revolutions and street fights.

In conclusion, I will touch upon military hygiene and medicine, as lately justly exposed by your distinguished countryman, Prof. Peaslee.

Annual Session of the "Ohio State Medical Society"—Repeal of the Patent-right Resolution of 1854—Report of a Special Committee on Medical Ethics—Endorsing the Proceedings of the "American Medical Association," &c., &c. By G. C. H., Dayton, Ohio.

EDITOR "AMERICAN MEDICAL MONTHLY":

After an interesting and spirited session of three days, at the city of Zanesville, the "Ohio State Medical Society" adjourned on Thursday last, June 7th, to meet in the city of Columbus, on the first Tuesday of June, 1856. The number in attendance was large, embracing representations from most or all of the counties in the State.

Subsequent to the election of officers, Medical Ethics occupied the first and part of the second days. The deep interest felt upon this topic, growing out of the previous action of the Society, and resolutions passed at the late Philadelphia meeting of the "American Medical Association," stamped it as the leading measure of the Session. Those who cherished any regard for the honor and dignity of the profession in Ohio, were moved by a common impulse, to wipe from their professional escutcheon a stain, which for the year past, had sullied its former brightness. I allude to the resolution passed at the last Session of the "Ohio State Medical Society" at Cincinnati, declaring "that it was not derogatory to medical honor, or inconsistent with professional dignity, for medical gentlemen to take out a patent for medical or surgical instruments."

In justice to the profession of Ohio, it should be known, that the above resolution was acted upon just at the close of the Session, when, as usual, accumulated business is dispatched without much consideration, and after a great majority, if not all the members residing out of the city, had left for their homes. These unorthodox principles, then, were only an expression of those present, and not even the sentiments of the Cincinnati profession, much less those of the State at large. Not one-tenth of the membership had any intimation of the passage of the resolution, until they saw it in the published transactions. The

feeling was wholly sectional, if not personal in its nature, as will appear from the action taken upon it at the late Session.

Before the resolution could be reached at the Zanesville Session, Dr. M. B. Wright, of Cincinnati, chairman of a special committee appointed "to take into consideration the propriety of making a thorough revision of the Ethics,"—A. C. of M. E.,—made a lengthy report. It was a disgusting, contemptible burlesque upon the "American Code;" in style, was low, flatulent, twaddling; in sentiment, unorthodox, revolutionary, and characteristic of the chairman; concluding with a resolution, recommending the abolition of the "American Code of Medical Ethics," adopted by the State and auxiliary societies of Ohio, and without proposing a substitute; leaving these organizations without law. This was the expression of a majority of the committee, and found response from a few of the senior members, some of whom are not remarkable for their honorable intercourse with the members of the profession.

Considerable excitement ensued on the reading of the report and appended resolution, and several efforts were made to dispose of them in a very summary manner; all of which, for the time, failed, from a prevailing difference of opinion on the part of the opposition, concerning the best mode of action; a part desiring to discuss the subject *in extenso*, others preferring to treat it with profound contempt. The paper was finally made the order of the day for nine A. M. Wednesday, when it was determined, as discussion would only increase personal animosities and sectional difficulties, to terminate the debate as speedily as possible. The previous question was therefore moved and sustained, and a vote upon the main question resulted in a rejection of the resolution by a large majority. I much regret that the yeas and nays had not been ordered, as they would have given a fair index to the sentiment in Ohio, upon the subject of Medical Ethics.

A motion was then made to repeal the Patent-right resolution, passed at the Cincinnati Session in 1854, which prevailed almost unanimously. A resolution endorsing the action of the "American Medical Association," in reference to the above resolution, was offered and carried with respectable unanimity. Thus another very unpleasant and disreputable contest be-

tween the advocates of Scientific and Pseudo Medicine has terminated, and the honor and dignity of the profession in the State vindicated. The object of the committee and friends of their measure, was to remove all restraint and obligations, and leave each member of the profession free to indulge *ad libitum* in every species of vice and chicanery, without forfeiting his claims to respectability upon the body politic. The public rebuke which has thus been justly visited upon them, will, I trust, be effectual in preventing the enactment anew of such scenes, which are alike repugnant to the feelings of every highminded, honorable gentlemen in the profession, and degrading to the Science of Medicine.

The agitation of this subject in Ohio, will result in decided benefit to the profession, by directing special attention to Ethics, heretofore too much disregarded here and elsewhere. Already it has perceptibly improved the sentiment and tone, and induced a greater unanimity in favor of law and order, than has hitherto existed.

The prompt means used by the "American Medical Association," in denying to the "Ohio State Medical Society" the rights of representation, until the latter should abrogate certain measures vitiating the Ethics of the former; were of the most righteous character, and will be productive of salutary influences throughout the American Profession. It is not only the inherent right, but the unquestionable duty of our National Congress, to impose such penalties as may be necessary, to maintain her laws inviolate. Had the above case been permitted to pass unrebuked, there is no calculating the extent to which mercenary motives might have induced designing men to continue defiance to rule. It behooves the Parent Association to demand from her representative bodies, the most religious observance of the letter and spirit of the laws. In this manner alone will harmony and good feeling be secured to the practitioners of the healing art.

"Delta," the Poet-Physician.

There is no department of science or art which has not been advanced by the labors of medical men. Some, indeed, like the science of psychology, have been almost entirely formed out of their labors.

But literature and the fine arts, also, owe much to physicians, poetry not excepted. The names of Darwin, Akenside, Armstrong, and Zimmerman, and our own Holmes, are familiar to all. And still another poet in the profession, recently departed, will claim our notice here. It is a duty both to the profession and to the honored dead, not to pass such examples of extra-professional eminence in silence.

Dr. DAVID MACBETH MOIR, the "Delta" of *Blackwood's Magazine* for more than thirty years, was a practicing physician in the town of Musselburgh, Scotland. He was a tall, well-built man, of kind and pensive expression, with a clear gray eye. There was nothing professional in his bearing, and no one would have supposed him to be a literary man. His fellow-townsmen have raised a monument to his memory, recording the fact that he was "beloved as a man, honored as a citizen, esteemed as a physician, and celebrated as a poet." But it is merely as a literary man, and especially as a poet, that he is to be spoken of here.

Dr. MOIR's literary career extended over a period of nearly forty years, from 1822 to a few weeks before his death, in 1851. To *Blackwood* alone he furnished "three hundred and seventy articles in prose and verse; on a great diversity of subjects, and in almost every conceivable style." In addition to these, he also wrote history, biography, criticism, fiction, poetry, and papers on antiquarian, medical, and agricultural subjects. "Few men exclusively devoted to literature as a profession, have contributed more largely, or more variously, to the literature of the day than he did. A most facile pen he must have commanded, to write so much! a most versatile genius he must have possessed, to write on such diversified topics; and a most active, diligent, time-redeeming habit he must have formed, to be able, amid the burdens and engrossments of a laborious and

anxious profession, to find either mental freedom enough to compose, or time and strength enough to commit to paper, such a large amount of literary work, on such a variety of subjects; many of which required both much thought and elaborate research."

His professional writings commanded the respect and approbation of his professional brethren. His unfinished "History of Medicine" has been highly commended. His previous reputation as a critic, was also confirmed and enhanced by his "Lectures on the Poetical Literature of the last Half Century," delivered only a few months before his death, at the Edinburgh Philosophical Institution.

Dr. Moir's "Poetical writings, with the exception of Genevieve, are mostly short; some in blank verse, the most in varied rhymed measures." If some of them give evidence of having been written in haste, it must be remembered that he wrote not for fame, but merely to give expression to his own feelings, and that the proprietor of *Blackwood* was continually urging him for contributions; though he was constantly engaged in a laborious practice. "Mungo Glen's Lament," in his famous autobiography of "Mansie Wauch," has been pronounced by GILFILLAN "the sweetest lament in the language."

The sweetness and gentleness of his poetry, has led many to speak of him as the "amiable Delta." But it is also replete with moral and religious thoughtfulness; for he was a Christian, as well as a physician and poet. "With him, religion was, in his own striking words, the

'Soother of life, physician of all ill;
The more than reputation, wealth, or power;
In the soul's garden, the most glorious flower;
Earth's link to Heaven.'

And this feeling deepened and strengthened as he grew older, until it came out in full development as he went down into the darkness of the valley of the shadow of death."

May such an example of talent, industry, and religious faith, while it honors the profession he adorned, not be lost, in its influence, upon the individual members of the same. E. R. P.

On Trephining in certain Cases of Fracture of the Skull and in some forms of Epilepsy. By O. C. GIBBS, M.D., Perry, Ohio.

A late number of the *London Lancet* contains a lecture by JAMES SYME, Professor of Surgery in the University of Edinburgh, in which occurs the following language :

“ You have, no doubt, all of you heard of the operation of trephining, and have read that it is required under the following circumstances : first, when purulent fluid exists between the bone and the dura mater ; second, when blood has been effused from the main artery of the dura mater ; third, when the bone is depressed injuriously : and you will perhaps be somewhat surprised when I tell you that, if you except the case of punctured fracture of very small size, such as a sharp-pointed instrument would produce, trephining *is never of any service.*”

We are indeed “ somewhat surprised,” that a surgeon of Dr. Syme’s experience and fame, should pronounce trephining “ never of any service,” except in cranial puncture with a sharp-pointed instrument. It is true that in many cases of fracture of the skull, with depression, the depressed portion of bone may be raised by other means than the trephine. But there are doubtless cases, where the inner table is extensively fractured, with only a mere fissure in the outer table. In such cases it would seem to us that the trephine was the only suitable instrument. Many cases of death have doubtless occurred, from the neglect of the use of trephine, where the symptoms of compression were not well marked, nor the fracture of the outer table considerable. Injury to the dura mater is not very rare, if we may credit authority from spicula of bone from the inner table, when the fracture of the outer is not sufficient to admit the successful use of the bone pliers.

Again, he says, “ I may remark, as we have happened to speak upon this subject, that epileptic attacks sometimes come on months or years after injuries of the head ; and you may be called upon to ‘ do something for the patient,’ as it is said—that is to say, to trephine the skull. I have myself on several occasions exposed the bone, and removed portions in such cases ; but from the results which have followed, I advise you *positively*

against such a course." * * * "Though I have been now nearly thirty-five years connected, in one way or other, with this hospital, I have never known a single case where blood or matter has been withdrawn with a satisfactory result." A case came under my observation, while in my pupilage, under the tutorship of Prof. Ackley, of Cleveland, in which a different result was obtained, than that mentioned by Dr. Syme. As it has not been previously reported, I propose a synopsis of it in this connection.

Miss A——, aged 18 years, through her father, consulted Dr. Ackley for epileptic attacks, to which she has been subject since her fifth year. The fits were gradually increasing in frequency, and it was thought the intellect was beginning to suffer. She received a kick from a horse, when but five years of age, over the right eye, which made a depression in the frontal bone, corresponding with one of the corks of the horse's shoe. The depression was still well marked. The Doctor enumerated the dangers, as well as probable advantages of an operation. The risk of death, and the chance of perfect recovery, by an operation, were contrasted with the almost certain imbecility subsequently, should surgical interference be deemed injudicious. The father and daughter were both well educated, and dreaded imbecility worse than death, and, after due deliberation, resolved to run the risk and try the chances of an operation. A crucial incision was made over the depressed portion of bone, and the flaps raised, the trephine applied, and a circular portion of bone removed. The inner table was found necrosed to considerable extent, the opening was enlarged with a mallet and gouge, and the whole of the necrosed portion was removed with the same instruments. The dura mater did not pulsate, as in health, and was consequently punctured; and by placing the opening in a dependent position, six or more ounces of purulent matter escaped. The operation occupied perhaps an hour; no anæsthetic was given; the patient retained her consciousness throughout, and made not the slightest complaint. The flaps were brought together and dressed with a compress and adhesive straps. The next morning the Doctor was called to the case—the patient had had another epileptic attack, the dressings were removed,

and the cerebral abscess was found filled, and was again emptied. The wound was then dressed with a tent, and recovery subsequently took place without other epileptic convulsions. For a year afterward, and for ought I know up to the present time, the cure remained perfect.

Prof. Syme's opinions may be in the main correct, and we should be loth to question so high authority, were we not positive that judicious treatment requires occasional exceptions to his directions. We may admit, with him, that "injuries of the head have long been a fruitful subject of bad practice and traditional error," yet we opine the error and bad practice will not be wholly numbered with the things that were, by almost wholly interdicting the use of the trephine.

Abernethy's True Character not generally understood.

We think the profession generally in this country, have a wrong idea of Abernethy's true character. We often hear it repeated, that when a medical student he was called the "ostler;" and are constantly hearing anecdotes, many at least of which are apocryphal, of his rudeness of conduct and expression, and his uncouthness of manners.

We do not by any means deny the latter, nor would we attempt to conceal the fact; but we would both explain his rudeness, so far as it had an assignable cause; and also call attention to other, and noble traits of character which have most unjustly been passed over in silence.

Mere justice to him demands that we do the latter. Moreover, the common view of his character has both called away the attention of the profession from his real merits, and made him appear little less than a savage or a buffoon; and also "kept in countenance a herd of vulgar imitators, who, devoid of his talents and real benevolence, aim at similar celebrity by copying his greatest defects."

We find an interesting sketch of Abernethy's character in a recent number of the London Quarterly Review, and from it make the following extracts:

"But * * * * we protest against the rudenesses in which he allowed himself to indulge.

"We believe he fell into this bad habit, primarily, from his thor-

ough honesty of character ; and secondarily, from an irritability arising from physical causes, induced by his early and prolonged exertions. But whatever explanation be given, it admits of no justification, and it is to be lamented as unworthy of a man whose real claims to public attention required no factitious aid."

But we propose here to call particular attention to the characteristics to which we have in the outset alluded.

Abernethy was the son of a London merchant, and the pupil of Sir William Blizard, and subsequently of John Hunter, who settled in London in 1763, the year before Abernethy was born. In person, he was "graceful, slender, and delicate looking, with a pleasing combination of benevolence and humor in his eye," and this, with his other intellectual accessories, rendered him as a lecturer, unrivalled. "He was remarkably free from technicality, and unusually rich in illustration. By the first, he smoothed the rudimentary progress of his pupil, and avoided a premature burdening of his memory. The latter peculiarity was so prominent as to suggest the possession of no small portion of genius, and gave an indescribable charm to his discourses. But his chief characteristics were, his humor and his dramatic power. The combination of these sufficed to make him equally entertaining and impressive. He thus could rouse the attention, stamp a fact or principle upon the mind, or touch the moral sensibilities, at will. In relating a case, particularly when repeating a dialogue with a shrewd or witty patient, he was inimitably droll, especially when the recital was made against himself. But Abernethy's humor, unlike that of Sydney Smith, and other wits, was greatly indebted to manner, and is not effective on repetition. His directions for making a poultice are amusing, as found in his published lectures ; but those who heard them, say, that nothing could exceed the raciness with which they were given. Parts of his lectures, printed exactly as they were delivered, are as amusing as any book of light reading ; and in the 'Eventful History of a Compound Fracture,' may be seen how important information may be conveyed upon a subject undoubtedly grave, without a trace of dulness. But it was in the more serious portion of his discourse, when reciting some act of neglect or cruelty, that the better qualities of the lecturer were apparent. His voice faltered with emotion, his eye flashed fire, and his whole soul seemed stirred within him. His sympathy with poverty in distress frequently appeared in his illustrations, and proved, when taken in connection with his many recorded acts of benevolence to the poor, the kindly nature of the man."

“The foundation of Abernethy’s character was unswerving honesty. He not only abhorred what was absolutely false, but detested the exaggeration which is relatively or inferentially so. He declined either to say or to do more than the welfare of his patient required, even when, owing to the weakness of human nature, such abstinence was unfavorable to his interests. Early in life he had seen, with indignation and contempt, the means by which some men attain success ; and the sight affected his whole future career. Beneath the varnish of a courtly manner, and an elaborate toilet, he had seen the coarse-minded and ignorant man in great prosperity. He had seen the fears of the timid invalid, coined into ducats by those whose mission it was to chase them away. He had seen an extensive machinery erected, whose main-spring was self-interest, and whose purpose and end was to do nothing, though mischief was too often the result. Long before Mrs. Witherly and her Doctor had been drawn by the hand of a master, he had studied their types in the school to which that master afterwards resorted. He had seen all this, and was resolved that his own relations with his patients should be free from all mystery, and based upon a clear understanding of their mutual positions. He explained to his patient his actual condition, and what was requisite to be done for him, in language so simple, as to be easily intelligible, and then considered he had done his duty. He no more thought of pretending to a power, or a prescience which he did not possess, than he would to property which did not belong to him. He declined to imitate some of his brethren of the gold-headed cane, and erect himself into an oracle as awful, as mysterious, and as false as that of Delphi. It was not necessary that he should grow rich ; but it was essential to his comfort, as an honest, upright man, that he should avoid getting money under false pretences. So far all was right ! Had Abernethy gone no farther than this, no friend to truthfulness could cast a reproach upon him. But alas ! he was to prove another instance of the folly of too exclusively directing the attention to one truth, or one view of a question. In his endeavor to avoid a recognized evil, he fell into another not perceived. From being honest in intention, he sank into uncouthness and rudeness of manner, and inflicted upon the feelings of many, injuries they would rather have suffered in their pockets.”

“His uprightness of character, and entire freedom from selfishness, might be illustrated by many examples. A gentleman had the misfortune to meet with a compound dislocation of the ankle (an accident, by-the-by, which Abernethy was mainly instrumental in re-

deeming from habitual amputation), on the road between Andover and Salisbury. An able practitioner of the former place was called in, and replaced the parts. He then said to the patient, 'now when you get well, and have, as you most likely will, a stiff joint, your friends will tell you, "ah ! you had a country Doctor," so, sir, I would advise you to send for a London surgeon, to confirm or correct what I have done.' The patient consented, and sent for Abernethy, who reached the spot by mail about two in the morning. He looked carefully at the limb, saw that it was in good position, and was told what had been done. He then said, 'I am come a long way, sir, to do nothing. I might, indeed, pretend to do something ; but as any unavoidable motion of the limb must necessarily be mischievous, I should only do harm. You are in very good hands, and I dare say will do very well. You may, indeed, come home with a stiff joint, but that is better than a wooden leg.' He took a check for his fee, sixty guineas, and made his way back to London. Soon after a wealthy clergyman in the same neighborhood had a violent attack of erysipelas in the head and arm. His family becoming alarmed, wrote up to his brother to request Mr. Abernethy to go down and visit the patient. Abernethy inquired, 'who attends your brother?' 'Mr. Davis, of Andover.' 'Well, I told him all I knew about surgery, and I *know* that he has not forgotten it. You may be perfectly satisfied. I shall not go.' Here, as the narrator says, he might have had another sixty guineas. We are aware that these and similar instances, in which he combatted the morbid exaggerations of those who consulted him, and endeavored to reason them into abstaining from undue indulgence in medicine, are looked upon by some as foolish instances of abnegation ; but we trust that the claims of honesty and conscience will generally (we cannot expect invariably), be held paramount by the members of an honorable profession, even when self-interest comes backed by a plausible, but lax morality."

E. R. P.

PART II.—REVIEWS AND BIBLIOGRAPHY.

“Nullius addictus jurare in verba magistri.”

The Chemistry of Common Life. By F. W. JOHNSTON. Appletons.

For this work we can hardly find enough praise, or enough censure.

The simplicity of the style, its clearness, elegance, and force, must wring from the most reluctant a tribute of praise. The pains-taking research the author has made among the musty manuscripts of the Custom-house and Downing-street, is here shown in full tables, which, under the touch of his pen, wear no longer a dry and repulsive aspect, but breathe and live.

And the design of the book is admirable. To popularize science : this is surely a noble aim, and one worthy of the highest praise. If “he who makes two blades of grass grow where but one did before, is a benefactor,” and deserves honor therefor, how shall we find words for him who opens a new field of thought to the common mind, brings star-eyed science within the sight of mortals, and though he cannot make men familiar with the goddess, yet teaches them to recognize her when they meet, and gives her, if nothing more, an introduction? And Chemistry, JOHNSTON here seeks to teach us, has something to do with common life. The air we breathe, the bread we eat, the smells we like, these every day things, are, the author would show us, none the less interesting because common, but, if possible, more so ; and certainly they are more important than the refinements of the science, which less intimately concern us.

But it is because we have so high an opinion of popular science, that we must blame the work of Johnston. It has some important defects.

1st. The logic and the physiology are bad.

2d. He contradicts himself.

3d. His statements are many of them *incorrect*, not to say *wilfully* false.

4th. The tendency of the work is to immorality.

The soothing effects of opium, “its sustaining” qualities, its tendency to promote the flow of ideas, &c., &c., are all drawn with such a roseate tint, that the lightly sketched picture of its evil effects will not have the power to dissuade from its use. To be sure, he admits that, taken in large doses, its tendency, its universal effect is to mis

ery and woe, but when told, as we are on page 351, of its power to confer happiness, when moderately taken, many are foolish enough to begin its use. An opium-using people—the world has one spectacle of such—may Johnston's work not make another !

Nor is the recommendation of opium the only immoral feature of the work. The use of narcotics Johnston seriously thinks is one of the "means by which man multiplies his enjoyments, intellectual and animal, and for the time exalts them ;" and that "the universal instinct of the race has led, somehow or other, to the universal supply of this want or craving," viz : the multiplication of enjoyments, &c. (Page 295.) *Of course* Johnston recommends the use of tobacco, alcohol, tea and coffee, and any other artificial stimulant that man has ever used. His *reasoning* we shall attend to by and by. But when we are trying to remove from our midst the sources of crime and misery, to have a "philosopher" tell us flatly that the increase of the use of alcoholic drinks among the Irish, is due to their general advance in material prosperity (p. 283), is an insult to our common sense, a disgrace to science, and betrays the utmost laxity of moral principle in him who makes it.

His statements are incorrect. He takes the view of Liebig (without acknowledgment), that alcoholic liquors aid the respiration, the formation of heat, &c., and proceeds to make out an argument for their use.

Now the latest experiments show that alcoholic liquors in the body become changed to *aldehyde*, by the abstraction from the tissues, the circulation, &c., of oxygen. Now where there is union of oxygen with any other substance, heat is evolved, generally, if not always. There, say Johnston and his school, you see we get heat in this way, and *therefore* alcoholic liquors aid in the formation and increase of bodily heat. All experience, however, has shown, unfortunately for Mr. Johnston, that in cold climates alcoholic liquors do not increase the bodily heat for any length of time, and that the users of alcoholic liquors are far less able to sustain cold, than water drinkers. And the experiments of Dr. Davis, in our country, show that the same thing is proved by actual experiment with the thermometer, viz : the general animal heat is *lessened* by the use of alcoholic liquors. Mr. Johnston's chemistry seems to fail him at this point. Let us carry it a little further. This local heat "is obtained only by the removal of that agent [oxygen] which is essential to healthy action." "This heat of combination is not a new quantity gained from a special food for respiration, but in a single statement, it is heat *from one source*,

substituted for the heat which *would have been obtained* from another source."* Johnston contends that alcoholic liquors are used in the manufacture of the carbonic acid gas we exhale from the lungs.

Dr. Prout made experiments, and found that the amount of carbonic acid gas, evolved from the lungs, was materially diminished by the use of alcoholic liquors. Dr. Davis and others have confirmed this. As Mr. Johnston has evidently seen Prout's work (at any rate he quotes from it), does not this view of his seem a *suppressio veri*.

He contradicts himself, not openly, always, and in so many words, but he expresses adherence to opinions which are as diverse, and as directly opposed to each other, as light and darkness. He recommends the moderate use of alcoholic drinks, but admits that in their extreme seductiveness lies their great evil. He says such drinks "are little else than alcohol, diluted with a large proportion of water, and flavored."

Now, he must know that alcohol is by itself noxious, and he must also know that dilution with water does not *change* its chemical or physiological action, but only modifies them. We say he must know this—if he doesn't he had better begin the study of toxicology—and knowing it, he must, as a chemist, as a man of sense, know that their action will be injurious. We cannot stop further to particularize, but will say in general, what must have struck every careful reader of his work, that there is a constant struggle between what he knows he ought to say, and what he does say. So that like Han's hog, "he is on both sides of de brook." The logic and the physiology of this book are bad. The ostrich, it is said, hides its *head* in the sand, and because it does not see its pursuers, thinks that it has baffled them. The foolish bird forgets, however, that it has left its whole body exposed, and by its neglect to run, has rendered itself an easier prey to the hunters. So Mr. Johnston's erroneous logic, which, had it only run, *might* have escaped, hides its head in the sand, and leaves its ungainly body for any critic to pierce.

And his physiology—really he must have studied in that school, whereof Sydenham said, "The man who teacheth himself medicine, hath a fool for a teacher."

Look at this argument for the use of alcoholic beverages, tea and coffee (page 288), "They [alcoholic liquors] thus lessen, as tea and

* For the chemistry of this paragraph, I am indebted to an opinion of Dr. A. A. Hayes, given to Dr. R. D. Mussey.

coffee do, the natural waste of the fat and the tissues, and they necessarily diminish in an equal degree, the quantity of ordinary food, which is necessary to keep up the weight of the body." (p. 288).

Now, for a man in his senses to say, that what lessens the *natural waste* of the body is useful, it really seems impossible. For we know not how many years the united voice of those who should know, has been,—“Keep the body and the mind as nearly as possible in the natural state. Allow the natural processes of life to go on unmolested, if you would have the ‘*mens sana in corpore sano*,’ whereof poets sing, and philosophers descant.”

And here comes in Johnston to say, that a habit which prevents the natural processes from acting, is a habit worthy of cultivation. Philosophy has fallen low, indeed, if such are her exponents !

Mr. Johnston adds, “And in addition to this, they ease and lighten the labor of the digestive organs, which, when the stomach is weak, is often a most valuable result.” It might be pertinently asked, whether it is the moderate users of alcoholic liquors, or the water-drinkers, who are the most troubled with weakness of the stomach ; but waiving that, *how* do ardent spirits “ease and lighten the labor of the digestive organs.” Is it by any chemical action ? We know of none. There may be some such action, but we are unacquainted with any experiments that show alcohol to *aid* digestion, chemically ; but we may gain a hint from the fact, that vegetables and meat soaked in alcohol, have much less tendency to decay.

In the experiments of Beaumont, the effect of the introduction of alcohol, was seen in the momentary arrest of the process of digestion. Is *this* the “easing,” &c., of our author ? When the stomach has recovered from the shock thus caused, it acts with an unnatural and unusual force, and hastens through the work assigned it. It is, in one word, stimulated ; not by a *tonic* stimulant, but by a reacting stimulant. The beneficial effect of this course of stimulation upon persons of weak health, and decaying vital powers, must be evident to the smallest capacity.

To diminish the “natural waste,” is not a very desirable thing, at least, when done in other methods than by using alcohol. The stoppage of transpiration diminishes the natural waste of the body, at least, does not allow it to escape (and there is no evidence that Mr. Johnston’s diminishment is anything more), and, cold, fever, death, follow in pretty quick succession.

Dyspepsia is evidently referred to by our author, in the phrase,

“when the stomach is weak.” Dr. Carpenter will be regarded by those who know him, or know of him, as highly as a Physiologist as Mr. Johnston, and Dr. Carpenter recommends *hydropathic* treatment, as by far preferable to alcoholics.

We think we may fairly say, that of the two reasons adduced by Johnston, for the use of alcoholic drinks, we have shown one to be false in its premises, the other false in its logic. Mr. Johnston, finding (pp. 282 and sq.) that the amounts of alcohol per head used yearly in England, Scotland, and Ireland, are, respectively, $3\frac{4}{9}$, $2\frac{1}{8}$, and $1\frac{1}{2}$ gallons; and feeling alarmed at this fact, goes to work to explain the *sobriety* of England, on the principles, that in England the alcohol is used mostly in the form of beer, that the Irish have less food than the English, and are *more excitable*.

This latter principle is really slightly amusing, that a nation's excitability of temperament makes more drunkards among them! Are not the French more excitable, more “mercurial” than any nation, and yet there is less suffering there from drunkenness than in staid and stolid England. The Irish have the reputation of being greater drunkards than the English. There is this difference, the Irishman has his “spree,” and gets drunk once a month, breaks a few heads, and has a “swate time” generally, while the Englishman guzzles and guzzles till, stupefied and brutalized, he abuses his wife continually, and maintains “the same old drunk all the time,” neglecting his family, and reducing himself through *drink* “to the poverty to which the Irishman is reduced by *England*.” Which is the greater drunkard?

On page 294, Mr. Johnston states that man “passes through three stages in his civilization”—

1st. The necessities of his material nature are provided for.

2d. He seeks to assuage the cares of his mind, and to banish uneasy reflections.

3d. He desires to multiply his enjoyments, intellectual and animal, and for the time to exalt them.

Having laid down these original and startling propositions, he represents the methods of his attaining these ends, to be for the first, beef and bread; for the second, fermented liquors; for the third, narcotics.

As to the first, we may say that Cuvier regarded man as a vegetable eater; and there are, and have been, many of the same mind. As to the second, if by uneasy reflections is meant conscience and the stings of remorse, we may say, the means suggested are very effectual. As to the third, education will do as much as narcotics.

It necessarily follows, that as those stages are "successive," the attainment of the third comes the last in the scale, and the nation who has attained *that*, has reached a higher civilization than one which has not. Now as (in Mr. Johnston's own words) "the aborigines of Central America rolled up the tobacco leaf and dreamed their lives away in smoky reveries, ages before Columbus was born, or the colonists of Sir Walter Raleigh brought it within the precincts of the Elizabethan Court," according to Mr. Johnston's views, the civilization of the Courts of Ferdinand and Isabella, and of Queen Elizabeth, was inferior to that of the Court of Powhattan.

Indeed, Mr. Johnston says, p. 194, that "teas and coffees have come more and more into use in Europe and America as the intellectual activity, which distinguishes the leading nations of modern times, has developed itself," inferring evidently that tea and coffee have helped to bring about that civilization,—as perhaps they have, by substituting for a stronger (alcoholic) a weaker poison.

Mr. Johnston informs us, p. 194, that by living in the use of tea and coffee, a man "will both be less miserable in mind, and will show more blood and spirit in the face of difficulties, than if he" did not. We had supposed that trust in an all-wise and all-loving Father, was that which best sustained men "in the face of difficulties;" but, as Mr. Johnston says on the cover, "The reader will not be surprised should he find in it *some things* which differ from what is to be found in other popular works, in his hands or on the shelves of his library." Is Mr. Johnston a materialist, and among popular works does he have any reference to the New Testament?

But lest we render the reader as weary of us as we are of Mr. Johnston, we must close with an earnest protest against using this work as a text-book, or having it "read by the million." There is enough popular error already,—we have no need of more.

Thanking Mr. Johnston for his facts, (though if the *falsum in uno falsum in omnibus* rule were applied, there would be more doubt than facts,) which, though twisted and distorted by him, yet recoil so terribly as to demolish him, we bid him farewell, with the hope that any young man who sees this review, will not, by the use of narcotics, or alcoholic liquors, endeavor to realize the state described on page 314. The German philosopher, according to Mr. Johnston, thinks and dreams, and dreams and thinks alternately while under the influence

* Our references are to the edition in one volume, as it originally appeared, in 7 parts.

of a narcotic. If any young man tries to do the same, we fear much lest he will find, as is evidently the case with Mr. Johnston, that his thoughts go off in the smoke, and his dreams alone find their way to the paper !

R. D. M.

*Table of the Semi-Centennial Mortality of the City of New York, from
1804 to 1853.*

We have received a copy of this Table from the City Inspector, THOMAS K. DOWNING. Few will form any adequate idea of the amount of labor necessary to construct such a table ; it being compiled from the records of the City Inspector's department for the half century commencing Jan. 1st, 1804, and ending Dec. 31st, 1853. It specifies the number of deaths in the city during each year, and the number who died of each particular disease.

An interesting demonstration of the rapid increase of this city, is found in this table. In 1804, the whole number of deaths was 2125. For 1828, twenty-five years afterwards, the number was 5181. And at the end of the fifty years, 1853, the whole number of deaths was 22,702. In general terms, while the mortality had *somewhat more than doubled* at the end of the first twenty-five years, it had, to about the same extent, more than *quadrupled* during the last twenty-five years. According to the census of the United States, at the decennial periods, the population of this city was, in round numbers, in 1804, very nearly 75,000 ; in 1829, about 190,000 ; and at the end of 1853, more than 600,000. And the annual mortality, therefore, of the city, was in 1804, 1 in 35.3 nearly of the population ; in 1829, 1 in 36.6 ; and in 1853, 1 in 26.3 nearly.

From this the inference follows, that the mortality remained proportionably about the same at the end of the first twenty-five years ; but had increased in a marked degree at the end of the second twenty-five years (1853). To modify this conclusion, however, we are to remember that previously to 1843, the deaths of many who were interred out of the city, were not reported ; and the increase of mortality has been cotemporaneous with the vastly increased number of emigrants arriving at this port during the past seven years, many of whom die in the hospitals of the city soon after their arrival. The number of deaths being 11,318 in 1846, rose in 1847 to

15,788. From 15,919 in 1848, it rose in 1849 to 23,773 ; the largest number for any one year, included within the table. Of this number, 5,071 were, however, of cholera ; and only 340 less than *one-half* of all in 1853, were children under five years old.

Aside from the mortality of recently arrived emigrants, the proportional mortality of this city, has probably not essentially increased during the past twenty-five years ; and the unfavorable comparisons instituted in this respect, between New York and some of the other large cities in this country, are seen to be altogether unfair, when we consider that, this being the great entrepot of foreigners, many of whom are prostrated by their voyage, and often also by grave diseases at the time of their arrival here, a large number die in the hospitals of this city, and thus their deaths are recorded as occurring here.

And not only so, but even those who arrive in good health, may, at any time within five years after their arrival, enter the Emigrants' Hospital ; and hence foreigners are being constantly sent from Philadelphia and other cities, if they fall sick, to the New York Hospitals to be cured, or to die, as the case may terminate. About 300,000 emigrants arrive annually at the port of New York ; and for the reasons just mentioned, it is not surprising that over 5,000 die in her hospitals annually. That all of these, or more than a small part, should be included in the annual mortality of New York, as compared with other large cities in this country, in point of salubrity, is manifestly unjust. We ourselves believe, that aside from the districts crowded with the foreign population, there is not a more healthy city in this country than New York. But while taking to her hospitals the diseased from other cities, she not only directly increases her own apparent mortality, but also directly diminishes that of the other cities, to whose incurables she furnishes an asylum. †††

Clinical Lectures on the Diseases of Women and Children. By GUNNING S. BEDFORD, A.M., M.D., Professor of Obstetrics, the Diseases of Women and Children, and Clinical Midwifery, in the University of New York. S. S. & W. Wood. 1855. pp. 563.

It is hardly possible for us to express an opinion of this book, whether favorable or otherwise, without being entirely misapprehended.

We therefore are compelled to pass it by, adding only that our enterprising New York publishers, the Messrs. Wood, have attended to their duties carefully, faithfully, and successfully, and produced a good looking volume.

Surgical Reports and Miscellaneous Papers on Medical Subjects. By GEORGE HAYWARD, M.D., &c., &c., &c. Boston : Phillips, Sampson & Co. 1855. pp. 452.

The papers contained in this volume are collected from various sources, and dedicated to the former pupils of the author. To them they will be of interest, in memory of their teacher. Some of these papers, good in their day, are now *passè*, while others possessed chiefly a temporary value. In some, addition has been made, to bring their subject up to the times. In one on vesico-vaginal fistula, the author adds a little more than a page against Dr. SIM's method of operating, of which he evidently has no practical knowledge, or he would have probably modified his language. In the article on Anæsthetics, with the date of March last, he adds still farther expressions of his fears concerning chloroform and chloric ether, and closes by saying "it is to be hoped that chloric ether and chloroform, as anæsthetic agents, will be abandoned altogether," &c. Now, although Boston had the honor of introducing anæsthetics, it is hardly fair that it should insist upon it that the whole profession should continue to use sulphuric ether. The talk about its safety, as compared with chloroform, &c., is mostly based on erroneous reports of the use of other similar agents, with careful explanations of those occurring with its use, and does not probably convince many of the profession. Were this not a friendly memorial, we should be disposed to discuss this, and some other topics broached in the book. As it is, we pass them.

PART IV.—CHRONICLE OF MEDICAL PROGRESS.

[Translations from the German, under this head, are made by Dr. H. N. BENNETT.]

The Operation for Vesico-Vaginal Fistula. By ROSER, TENNER, and BOECK.

[The following summary of several cases of Vesico-Vaginal Fistulæ, and of the various methods of operation, adopted by some of the first surgeons of Germany, is presented to the readers of the MONTHLY, partly for the interest of some of the cases, but principally to contrast the severity, complexity, and inefficiency of the operations still employed by the first surgeons of Europe, for the cure of Vesico-Vaginal Fistula, with the simplicity and efficiency of that of our own countryman, Dr. Sims, with the details of which latter, I, of course, suppose the readers of this Journal to be acquainted.—H. N. B.]

Prof. Roser has recently succeeded in curing three vesico-vaginal fistulæ by the suture, so fortunately that in each case he was able to remove the threads upon the fourth day, and pronounce the patient cured. All the cases were of long standing, and in two of them several other unsuccessful operations had been already tried. Roser's method is in general that of Wutzer, only with the difference that the sutures are *very firmly* fixed. The vaginal mucous membrane bordering upon the fistula, is circumvented by two superficial curved incisions, and this portion of the membrane removed with the aid of the knife and scissors. Then stout knotted sutures, consisting of from four to six strong silk threads, are immediately introduced in such a manner, that a broad portion of the vaginal mucous membrane is grasped, but the vesical mucous membrane not perforated at the same point, the suture being carried through the border of the latter. Hereupon the sutures are very firmly knotted together, and, as happened in the three cases above mentioned, upon the fourth day they will have already cut through the outermost portion of that part of the mucous membrane embraced by them. The healing was already so complete at this period, in the cases just referred to, that water could be injected into the bladder with some force, without fear of again rupturing the newly adhered part.

According to this, the whole secret of the treatment of vesico-vaginal fistula consists in the tight stitching. Dieffenbach, after many vain attempts, threw aside the suture, and resorted to the actual cautery; Wutzer likewise obtained results so unfortunate as not to invite imitation; the whole fault appears to have consisted in not

drawing the ligatures sufficiently tight. Through the circumferential freshening with the knife, the same effect will at all events be attained, as through circumferential cauterization, indeed, more certainly, since, if the primary healing by the suture should fail, we should have in consequence of the circular excision of the mucous membrane, a circular contracting cicatrix, and in consequence of this contraction of the cicatrix, we might hope for a narrowing, if not a closure of the fistula. The favorable results which Jobert obtained by his procedure, could not possibly have depended upon the lateral incision, but much more upon the circumferential freshening, and the close stitching.

Among the instruments requisite for the operation, the following deserve to be mentioned : 1. A tin *speculum* very obliquely truncated, which has also a fenestrum at the entrance ; this is to be so applied, that the urethral opening remains uncovered. At the posterior surface of the speculum, is found a long narrow fenestrum, which serves the purpose that the needle in the application of the suture to the posterior lip of the fistula (from the posterior vaginal region forwards), may not find a hindrance in the wall of the speculum. 2. A *fistula-holder*, which is introduced into the fistulous opening, like a button in a button-hole, and being inserted, serves for drawing, distending, and fixing the fistula during the incisions. 3. A long *hook-forceps*. 4. A long, slender Dieffenbach's *needle-holder*, in which is fixed beneath, a stationary hook. 5. Large, strongly curved *needles*, somewhat larger than those of Jobert.

Dr. Simon, of Darmstadt, applies a two-fold suture, as he calls it, which consists in this, that first with several stitches, the substance of the walls of the fistula are broadly and firmly embraced and drawn together, while fine, superficial stitches serve accurately to unite the edges of the wound at those points where this has not yet been accomplished. Roser has likewise made use of these superficial sutures in two of the above mentioned cases. The procedure of Simon is as follows : 1. The uterus is drawn downward with hooked forceps, or double hooks. 2. The reäbrading is made funnel-form, by puncture of a pointed knife and continuance of the incision with the blunt bistoury. 3. The punctured points for the sutures lie at the distance of one centimetre from the border of the fistula. The mucous membrane of the bladder is also perforated ; in large fistulæ, or with tension of the parts, the above described two-fold suture is applied. Simon ascribes little use to lateral incisions, and considers the two-fold suture as much more efficient in overcoming the tension, for the

lateral incisions, if they are not made of dangerous length and depth, accomplish but little towards relieving the tension. In fact, in suture of vesico-vaginal fistula, lateral incision through the anterior lip of the os uteri, or in fistulæ lying very high, cleaving of the os uteri itself can alone be useful.

Roser thinks that incisions, such as those just mentioned, are unwarrantable, and says that if Simon thinks nothing is to be feared in operations upon these organs, he cannot agree with him.

Tenner reports two successful operations for vesico-vaginal fistula, in the *Deutsche Klinik*, December, 1854.

The first was conducted in the following manner : By means of a grooved horn, provided with a handle, the posterior vaginal wall was depressed, and the uterus drawn downward with a Muzeux's forceps, so that the fistula was almost wholly brought external. Then the borders of the fistula were reâbraded partly with a pointed, partly with a blunt bistoury, which was accomplished in the requisite breadth to include the vesical mucous membrane, after the fistulous edges were sufficiently distended by a strong hooked forceps, and pointed hooks. After the cessation of the hæmorrhage, six knotted sutures were applied, and the threads drawn moderately tight, the wound completely united, being an inch and a half long. Upon the 9th day two of the threads were removed, and upon the following day, the remainder ; the cure was complete.

In the second case, Tenner made a crescent-form incision, after Jobert's method, about half an inch distant from the posterior border of the fistula, at the point of insertion of the anterior vaginal wall in the neck of the uterus, separating the former from the latter, and passing forward between the bladder and uterus, whereupon the fistula lost its round form, and the edges approximated in a transverse direction. The fistulous borders, the vesical mucous membrane included, were now removed about three lines in breadth, and by means of a needle fixed upon a needle-holder, a thread was carried through the anterior and posterior border of the fistula, upon the left side, by which, however, the posterior border was torn from the neck of the uterus, thus forbidding any farther attempts at a longitudinal union of the fistula. Nothing remained, therefore, but to stitch the anterior border to the anterior surface of the neck of the womb. Although during the first days after the operation, the greatest part of the urine flowed through the catheter fixed in the bladder, yet some urine also constantly passed through the vagina, and as upon the 14th day after the operation, Tenner for the first

time examined and removed the left suture, which was not encrusted by urine, he found the parts lying in perfect apposition ; two days later the other sutures were removed, the right one being encrusted. In a small depression corresponding to the right knotted suture, was felt the point of the catheter, and water injected into the bladder made its appearance through the vagina. Repeated strong cauterization with *lapis infernalis*. After some weeks, during which time the catheter still remained, the healing had so far progressed, that this could be removed ; a more frequent inclination to urinate took place, and in the upright position some urine still flowed through the vagina. Since in spite of repeated touchings, a small opening still remained, Tenner carried into this a fine pointed hot iron, and cauterized also the circumference of the same. Soon after, the woman could retain her urine perfectly, but during menstruation only one hour. An accurate examination made some months after, discovered about an inch and a half from the orifice of the urethra an uneven transverse cicatrix, in the course of which were found two funnel-form depressions, one of which still formed a fine filiform passage to the bladder ; when water was injected into the bladder, it returned entirely by the catheter. Half an inch behind the transverse cicatrix was found a longish dentated notch, the entrance to the uterus. For a year this woman has remained in the same condition.

The lateral incisions recommended by Jobert in this operation, are especially advisable, where they can without disadvantage be made so deep that they effect a removal of the tension ; in many cases, however, we may by this means prevent the including in the sutures, the amount of substance demanded by the tension. The momenta essentially to be considered in this operation, through neglect of which many an unfortunate result is caused, are the broad requicken- ing of the fistulous edges, and their exact apposition. The sutures must include the mucous membrane of the bladder, and embrace at least a centimetre of substance, and still more where the tension is strong ; the sutures are to be applied about a centimetre apart. Repeated water injections of both cavities are also advisable, in order to prevent accumulations of saturated urine, of blood, pus, &c. The employment of the uterus for the restoration of loss of substance was proposed, and again abandoned by Dieffenbach, but has been repeatedly done by Jobert with success.

The following case of operation for vesico-vaginal fistula is interesting in many points of view, although no complete closure of the fistula was attained. It is described by Prof. W. Boeck.

A primiparous woman, 38 years of age, after five days of pain, was delivered by the forceps, in consequence of the occurrence of convulsions. After this delivery a procidentia of the uterus occurred, and when no band was applied for the purpose of holding this organ back, it became completely prolapsed upon the slightest exertion. When the forceps were applied, no urine had been passed for 36 hours, and the attempts to evacuate the urine previous to the application of the forceps had been fruitless. During the operation the patient felt a violent pain in the right inguinal region, and as the head of the child protruded, a quantity of urine issued with force. She soon observed that her urine flowed involuntarily, and indeed so much the more when she endeavored to restrain it. The pains in the right inguinal region continued after birth, and during the first week the right leg could not be moved. Gradually the patient recovered so far that she could sit up and walk with the aid of a staff, nevertheless, in consequence of the persistent pains, the leg remained weak. With this was associated a constant inclination to pass water, which increased more and more, and was always accompanied by pains in the right leg down to the toes, and in the inferior and middle part of the abdomen. The woman became again bed-ridden, and noticed that sand passed with the urine. Some months after a stone was taken from her vagina, without, however, any investigation as to whether it had been formed in the bladder or vagina. The violent pains in the side still continued, and lying became constantly more irksome; in order to procure relief, the woman was placed in a sitting position, and there the urine passed off incessantly; for eleven weeks she sat night and day upon a night stool. In consequence of this her legs became so swollen, that they were compelled to place her again in bed. She now sought to obtain relief by assuming a bent position, and remained lying thus a year and a half, until she came under the observation of Boeck. He found the patient almost doubled, lying upon the left side, the urine flowed incessantly, the pains were persistent, and upon every motion became almost unendurable, sleep and appetite failed, bowels torpid, menstruation regular, but accompanied with great suffering. The introduction of the speculum excited the most violent pains, and its accomplishment was rendered impossible by an opposing tumor. With the finger, Boeck now detected a tumor, which appeared to proceed from the bladder, wherefore, without being aware that a stone had been formerly extracted from the vagina, he suspected the presence of one in the bladder. He soon determined this, which explained to him the violent pains.

Chloroform did not operate favorably upon the patient, and every attempt to remove the stone, which was of considerable size, from the so-long irritated bladder, was fruitless, until Boeck divided the urethra, and was thus able to crush the stone with a lithonriptor. The fragments of stone, removed successively upon the following days, on account of the great irritability of the bladder, were some of them an inch and a half long, by three-fourths broad. When the last remnants were removed, the pains had become considerably less, but the mucous membrane of the bladder was yet so affected, that the contractions of the bladder were yet accompanied by much pain. The pains in the right leg diminished gradually, and towards the last appeared to have stood in connection with the presence of the stone in the bladder, but could not have thus arisen shortly after the delivery, since the patient at that time manifested no symptoms which indicated stone. The strength of the patient was so much exhausted by the repeated painful operations for the removal of the stone, that it was necessary to let her rest for several weeks, and then first, after she had in some measure recovered, Boeck proceeded to examine the fistula, which could now be done with the speculum. It was found that the anterior lip of the os uteri, and a portion of the anterior part of the neck of the womb, were wholly destroyed by the gangrenous process arising after the pressure of the head of the child upon the bladder, and that the posterior lip was divided into two lobes, which hung down in a hypertrophic condition, and rendered any examination difficult. Upon lifting up these lobes with a tenaculum, Boeck found immediately beneath them a small opening, which led direct into the bladder, and from which he saw the urine issue. On account of the destruction of the anterior lip, and a part of the neck of the uterus, he could not undertake the operation recommended by Jobert, but applied only a simple suture ; but instead of the usual suture he used a *lead wire*. Having placed the patient upon her knees and elbows, he requickened the edges in the usual manner, and then applied the suture by the aid of a curved needle, in which the lead wire was fixed in the same manner, as in Dieffenbach's needle for staphyloraphy. Instead of operating through the speculum, Boeck in this and the following operations, made use of the tenacula, because by this means he had in his power exactly the points which he wished to be able to extend, and also was less hindered during the operation by these, than by a common speculum. At the same time he caused the whole part to be drawn down as much as possible, by the aid of Amussat's uterine forceps, and there-

with the lobes and posterior uterine lip to be seized. This instrument, Boeck considers, in cases like the preceding, as more appropriate than the hooks of Muzeux, since there is no danger of its tearing out, and traction can be made as strongly as circumstances require. The lead wire remained five days, but had not effected a complete closure, but only a lessening of the opening, so that Boeck hoped to effect a complete union by cauterization with *lapis infernalis*, so much commended by Chelius. These cauterizations were continued a long time, and the opening became smaller and smaller, and at last so small, that it could no longer be seen. Nevertheless, a quantity of urine continued to flow, so considerable, that it became certain that a not inconsiderable fistula must still exist, situated higher than the one which had closed, and Boeck began to suspect he had to do with a vesico-uterine fistula. By continued examinations, he succeeded in detecting, directly upwards at the point, where the anterior part of the neck of the womb had been destroyed by gangrenescence, a transverse cleft of some lines in length, but very minute breadth, which was situated very near the present os uteri. The above-mentioned lobes of the posterior lip concealed this point perfectly, and as these were raised by the aid of the tenaculum, and the urine streamed out, it seemed on account of the position of the fistula, as if it issued from the os uteri. This fistula might, therefore, be referred to those which Jobert has named vesico-utero-vaginal fistulæ. This fistula was also closed by two sutures of the usual character, the application being much more difficult; the vagina was now syringed out, but no tampon introduced. A catheter was fixed in the bladder, and the woman placed in the dorsal decubitus. One suture being removed after six, and the other after eight days, the fistula was healed, and after a few weeks the patient left her bed. The urine had hitherto flowed, not only through the fistula, but also involuntarily through the urethra on account of its division, and considerable distension in the extraction of the stone, but could now be somewhat retained, and again ejected with a forcible jet. Later it appeared to the patient as if no urine any longer passed involuntarily, but soon she began to complain that some drops flowed down upon the thighs, which, as she and Boeck both thought, issued from the urethra. But upon placing a sponge in the vagina, it became evident that the urine proceeded from this passage, and repeated examinations were again made. The last point operated on, Boeck found perfectly healed, but saw at the same time that an inconsiderable quantity of urine issued somewhere. After many futile examinations, he ascer-

tained, having injected a colored fluid into the bladder, that the urine came from the fistula first operated on, which was not fully healed, and which still presented an opening, so small that it could scarcely be seen, and could be passed only with a very fine sound. Boeck again applied the suture, and indeed with the aid of Stromeyer's apparatus ; but as the former cauterizations had produced a considerable induration in the part, the needles constantly bent, and he was obliged, after several vain attempts, to proceed to the application of a common suture, which, however, this time, produced no desired result, but rather aggravated the condition. Boeck, therefore, again resorted to cauterization, and for this purpose chose sulphuric acid. After some touchings with this, the fistula diminished in size, and the urine issued in less quantity than before. When the patient lay, or was up but a few hours, scarcely any urine passed, but in the afternoon the discharge was greater, and the uterus and all the parts appeared to sink deeper into the pelvis, with which condition was always connected an increased discharge of urine. As, however, this discharge of urine consisted only of a few drops, Boeck thought that if the patient would wear a pessary, and thus hold up the parts, the inconsiderable efflux of urine would be still more diminished. She at first used a longish sponge, which was retained in the vagina by means of a bandage, and indeed served the double office of holding up the uterus, and absorbing the urine. After half a year the efflux had so diminished, that the urine no longer flowed down upon the thighs, and the woman was not offensive to herself and others from the urinary smell. She was otherwise very well, had regained her former strength, and appeared healthy.

The formation of a stone in the bladder, and the simultaneous occurrence of a urinary fistula, is, as Boeck observes, not frequent, at least, that of a stone of the size of the one in the above-mentioned patient, and Boeck affirms that he has not been able to find a perfectly similar case. That stony concretions occur in the vagina simultaneously with these fistulæ, is according to him nothing unusual, and is easily explained. The simultaneous existence of two fistulæ is likewise not frequent. Jobert has observed it only in two or three cases. Boeck calls attention in this case to the smallness of one opening, and the impossibility of detecting it without injection. It is worthy of remark also in this case, that during the whole time menstruation was regular, while, usually after the origin of a fistula, it does not appear in the first months, or even longer, and afterwards flows but sparsely.—*Schmidt's Jahrbücher*, February, 1855.

PART III.—PROCEEDINGS OF SOCIETIES.

NEW YORK PATHOLOGICAL SOCIETY.

April 25. *Dr. Isaacs* related the case of a child three days old, who was seized with severe pain in the abdomen ; great swelling of the belly followed, with obstinate constipation, and it died ten hours after. On examination the cavity of the peritoneum was found filled with blood, fluid and coagulated, which was found to proceed from a rupture of the bowel, occasioned by a strangulation from invagination ; the rent was a quarter of an inch above the point of constriction.

Dr. Metcalfe presented a *fetus* with its *placenta*, discharged at about the fifth month. The patient was about 35 years of age, and had twice miscarried ; the first occurred suddenly, at night, without any symptoms, at the third month. She was this time seized with chills, which recurred regularly at a certain hour, two weeks before her miscarriage. She recovered from these symptoms, but on rising one morning she had some uterine hæmorrhage ; she remained quiet for some time with relief, but on attempting to rise again, the flow of blood was greatly increased. There was no pain accompanying the hæmorrhage, and the only treatment indicated and followed was rest and an anodyne injection. These did not prevent a miscarriage, which took place on the following day. On examination of the *placenta* microscopically, it was found to have undergone fatty degeneration, and gave evidence of the origin of the hæmorrhage which had occurred. This hæmorrhage seemed to be due to inflammation, the result of which was a great increase of fibre-cells. The patient is very susceptible to conception, and the question of practical importance is, how can the recurrence of this change be prevented ?

Dr. Clark inquired if there was not a liability to mistake fibre-cells at the fourth month. The hæmorrhage was not necessarily due to inflammatory congestion, but might depend upon fatty degeneration of the placental ducts, to which there was a great tendency in these cases of fatty degeneration. The fibre-cells may be due to the process of growth, and not inflammation.

Dr. Metcalfe replied that the fibre-cells were greatly increased at the point where the hæmorrhage occurred ; he had often examined these specimens, but never saw anything like this.

Dr. Metcalfe presented the kidney of a patient who had died of general anasarca, and gave the following history, with microscopical drawings :

Peter Brown, a native of Holland, seaman, was admitted to the New York Hospital, March 19th, suffering with general dropsy and dyspnœa.

The patient was a robust man, in appearance, 45 years of age, and up to the commencement of his present illness, had led a very healthy and temperate life. Three months before admission to the Hospital, after having left the Cape de Verde Islands, on an indirect homeward voyage, he had noticed a failure of appetite, debility and general swelling. It was not remembered at what part of the body this latter symptom commenced. He was disabled from the performance of his duties, and was obliged to lie in a small, uncomfortable berth, in the hold of the vessel, for two months, before reaching New York, living on tea and coffee, salt meat and ship biscuit. He was thirsty, and drank a great deal of water. There had been no complaint of headache, no pain across the loins, no disturbance of circulation. The bowels had been constipated, the urine not materially changed in quantity, the skin habitually harsh and dry.

On admission, it was noted that the dropsy was great, effusion having taken place into the peritoneum and pleural sacs, as well as into the cellular tissue of the whole external portions of the body. There was œdema of the lungs, as shown by the existence of generally-diffused crepitant rhonchus, without dulness on percussion. The skin was of a dull, whitish color, quite dry, and a few small purpuric spots existed on the right thigh. There was the common dropsical erythema, above the ankles. There was not, and had not been, any sponginess of the gums, or disposition to hæmorrhage from them. Respiration, 15 to the minute, was sighing and labored—pulse 96, small and regular. Bowels torpid, urine of natural quantity, acid, without sediment, healthy in color. Sp. gr. 1011. Heat and nitric acid gave no sign of albumen. The microscope, on examining the lower strata, after several hours rest in a test-tube, gave negative result, excepting a few yellowish crystals of lithic acid.

The heart, on physical examination, afforded nothing abnormal, beyond weakness of its sounds. The limits of the liver were not different from those of health.

In view of the prostrated condition of the patient, he was put upon the use of the Hospital diuretic (squills, senega, carbonate of ammonia), and the legs were punctured in ten or twelve differen

places on each, with the point of a lancet. Gin toddy, milk punch, and beef tea, were ordered, as support and stimulants.

After the second day the anorexia increased so much, and he complained so of heart-burn, caused by the gin, that lighter nourishment was substituted, and the alcoholic stimulus withdrawn. Notwithstanding the very copious flow of serum from the punctures, by which the abdominal, scrotal and general anasarca was diminished greatly, the dyspnœa and pleural effusion increased. His strength continued to fail, and on the 30th of March, eleven days after coming under observation, he died, by exhaustion and apnœa.

Daily examinations were carefully made of the urine, which presented no characters different from those noted, on entering the service. The quantity continued normal, and the sp. gr. 1011.

At the post mortem examination there was found effusion, of moderate amount, into the pleura; lungs healthy, excepting general œdema of the parenchyma, and carnification of the lower edges, from pressure. Heart weighing 17 ounces, much covered with fat, valves healthy and sufficient; aorta, for a foot from origin, dilated, thickened, atheromatous. Liver healthy and normal in size; gall bladder very much distended with dark greenish bile.

The kidneys, of normal size, pale whitish in color, allow the capsule to be peeled off with the greatest ease, leaving the surface of the organs of a mottled form and red color, and very granular. On section, the atrophy of the cortical substance is striking, in many places, allowing the basis of the pyramids to approach within half a line of the capsule.

On examination by the microscope, there is seen an unusual quantity of fibrous tissue; the renal cells are studded thickly with fine oil globules, rendered very evident by treatment with sulphuric ether. The malpighian bodies, in some parts normal, are in others distended by effusion into their capsules, and have the tufts pressed towards the sides or centre and very much atrophied. Albumen was found in urine taken from the bladder after death.

This case was admitted to the Hospital just before the clinical visit. It was shown to the students as an instance of renal dropsy, the diagnosis being founded on the absence of signs of hepatic or cardiac lesion, the waxy color of the skin, the extension of the dropsy to the whole body, and the low specific gravity of the urine, with no excess of quantity in the excretion. It is usually deemed conclusive evidence against the existence of Bright's disease, if the urine be examined, on several occasions, and found free from albumen. The

present case, with several others brought before the Society at former meetings, will prove that this evidence, as usually taken, is not entirely trustworthy. Had it not been for the tests applied to the urine found in the bladder at the autopsy, it might have been cited as a case of chronic granular nephritis, without albumen existing in the renal secretion.

Dr. Macready exhibited a liver, taken from an old man, who entered Bellevue Hospital in a very prostrate condition, with no marked symptoms other than emaciation, jaundice, anxious countenance, pain in the right side, and a large liver. At the autopsy it was found that the enlargement of the liver was due to closure of the common duct, by a tumor developed beneath the mucous membrane. The hepatic ducts were in consequence enormously distended. The tumor appeared to be polypoid, and produced below the union of the cystic and hepatic ducts, and from the mucous membrane, completely filling the tube.

Hydrophobia.

The following experiments, made by Dr. J. H. GRISCOM, on a patient suffering from hydrophobia, at the New York Hospital, are quoted as reported by him to one of our city newspapers :

I found the patient, at the time of my visit, on the bed, to which he was strapped to prevent injury to himself and others, perfectly calm to all appearance, intelligent, and entirely submissive to treatment. He conversed freely, though with some confusion of dates and facts respecting the time when he received the bite (between four and five weeks previous), and other circumstances connected therewith, and of his own feelings then. The scar was upon the lower lip, perfectly healed, and exhibiting no signs of irritation. As he thus lay and conversed, no one could suppose that he was laboring under so fatal an influence, unless either the finger were laid upon the pulse, which now numbered nearly 160, and was full and bounding, or he complained of the pain in his throat and difficulty of swallowing. On examining his throat, a degree of redness was observed in the fauces, accounting partially for the pain of deglutition. After giving further directions for his continued comfort and the prevention of more convulsions, it occurred to me to test the truth of some of the popular notions respecting this disease, especially in relation to that peculiar symptom from which it derives its name, viz : *the dread of water*. The

results of these investigations, it is hoped, may have the effect not only of correcting some false views on the subject, but, what is more desirable, of hereafter alleviating the intense suffering of those afflicted with the disease, if indeed they may not increase the means and probability of recovery.

The most distressing part of the malady, is undoubtedly the *difficulty and pain in swallowing*, arising from sharp spasmodic action of the muscles concerned in this function, extending sometimes even to those of the neck and chest, and producing a feeling of alarming constriction of the organs of respiration, causing almost complete though temporary suffocation, and thus aggravating if not actually exciting, the convulsions, with the more or less violent contortions and discoloration of the countenance, protrusion of the eyeballs, and other active and painful symptoms. It is a popular idea that all these are excited by the sight, and even by the sound, of water, and although an intense thirst almost universally coëxists, the friends, and even the patient himself, anxious as they are to alleviate it, dread even the presence or sound of water, much more its approach to the lips, lest all these horrible symptoms should ensue. My investigations, simple as they are, show how relief may be extended in future in those most distressing symptoms—*thirst* and parched and burning throat—if the means thus pointed out, are sufficiently, promptly, and carefully attended to.

That the mere *sound* of water will not excite the paroxysm, was proved in this case by the fact that the noise of a stream of water, in a closet, was continually within reach of his ears, to which he gave no heed whatever while I was by him; though it is said that when he first heard it he was unpleasantly affected by it. Observing this, I then desired to try whether its actual taste, *without swallowing*, could not be safely borne : and to this end, I induced the patient to take a mouthful, but to hold it in his mouth without attempting to swallow. *He did so*, and after retaining it sufficiently long to satisfy both him and myself, at my direction he ejected it from his mouth, expressing gratification at its cooling effect.

One step further I determined to go, though not without some fear of producing a paroxysm of pain, and perhaps a convulsion. I sent for some ice, and with a little persuasion placed a small piece in his mouth, directing him to allow it simply to trickle down his throat as it melted, avoiding, as before, every effort at swallowing. A piece about the size of a thimble was first tried, the cooling effect of which was exceedingly grateful, and he willingly accepted a second piece. It was very difficult for him to avoid deglutition ; he did succeed, however, and all the ice descended to the stomach, as it melted drop by drop, demonstrating in the most conclusive manner that water *per se* has no influence in the causation of the spasms, and that the disease is improperly named. It is not a *hydro-phobia*, a dread of water ; it is, rather, a dread of *swallowing*, whether of water, or any other liquid, or even of solid substances, as my patient said to me ; and if that act can be avoided, as in his case, relief may possibly be afforded

in others by the administration of cooling, and perhaps even more decidedly palliative remedies. In fact, encouraged by these observations, I directed the application of a strong solution of nitrate of silver to the fauces, with the view of allaying the irritation apparent there, and this he bore with not more difficulty than is noticed in a majority of the cases in which this astringent is applied for other diseases.

By these means, and the administration of anodyne and nourishing enemata, the application of cool cloths to his overheated head, mustard poultices to his extremities, and dry heat to his general surface, and even by inducing him, a few hours before death, actually, though slowly and with some difficulty, but not so as to bring on any general paroxysm, to swallow some ammonia and brandy, the patient was not a little comforted, and his passage to the grave made more quiet and less painful. Unhappily, there is yet no known antidote to this mysterious poison, and the symptoms can only be treated on general principles. The ebb of life was attended with no unusual phenomena—none of the unnatural sounds, barking or frothing, or biting, popularly ascribed to this disease being noticed. The vital powers became gradually exhausted, until at 9 $\frac{3}{4}$ o'clock on the 15th, twenty hours after admission, he breathed his last.

NEW YORK ACADEMY OF MEDICINE.

Discussion of Dr. Horace Green's Paper.

Notwithstanding the excessive heat, a large gathering of medical men took place, at the regular meeting of the Academy, held on Wednesday evening, July 18th, in the small chapel of the University. Dr. J. W. FRANCIS, the president, took the chair.

Dr. Reese stated that several members had not received the printed copies of the transactions, and as it was well understood they were printed for the purpose of giving every member an opportunity of discussing the subject intelligibly, which they could not do without copies, he moved a postponement of the discussion. Certainly it would be much more agreeable on account of the extreme heat.

The motion was overruled, however, and the Society went into Committee of the Whole, Dr. J. CAMPBELL STEWART in the chair.

Dr. Rockwell called for the reading of the Reports, as he had not received them in printed form, which was denied him, and he left the room.

Dr. Griscom proposed the adoption of the Resolutions appended to the Majority Report.

Dr. S. C. Foster called for the reading of the two sets of Resolutions, and they were read.

There being a pause, and the vote being apparently about to be taken, *Dr. Green* stated that he should like to hear some reasons given why these Resolutions should be adopted. He would wish before that was done, to give some reasons why they should not be.

Dr. Detmold thought that the reasons for adopting the Report and Conclusions were contained in the Report itself; that the silence of the Academy was a tacit consent to its propositions; that the reasons against it were to be found in the Minority Report. He thought discussion would elicit nothing new, and that no action need be taken by the Academy *formally*. There were four signers to the Majority Report, and one to the Minority, and he thought the opinion of the Fellows of the Academy was in that proportion. The Majority Report did not satisfy him perfectly, yet he was willing to adopt it. It had faults, but even those made it better in some respects. It was not written with sufficient care—it was not guarded against criticism. It proposed certain tests, which were not objected to by the Minority, and therefore they are perhaps correct; still they were not satisfactory to him. He would have liked that the Report should have presented one indisputable sign. The phrase “not satisfactory” often occurring, was enigmatical; but these were not radical faults. The Report has convinced him, that in the many cases where he had used the sponge himself, and seen its use by *Dr. Green*, that he had been mistaken as to where it went. The Minority Report had no such faults. It is an ably concocted paper, but it has a radical fault. It is not a Report. It is a Review of the Majority Report, so ably and fully done, that discussion was forestalled. As in a court of justice, it had even arrogated to itself the power of impeaching and throwing out testimony. It had completely ignored a case, where all acknowledged that the tube did enter the trachea—one peculiarly fitted for the proposed treatment. He said that *Dr. Anderson* gave his assent to the record of facts, but did not sign the Report, because he considered it was not complete—not that he dissented from it. The letter of *Dr. Stevens* merely gave a practical lesson upon the general use of Nitrate of Silver. Discussion will do no good—it will change no opinion. The subject will soon be taken up on the other side of the Atlantic, and unprejudiced persons, away from all personal feeling, will soon report dispassionately upon it.

Dr. John Shanks said: The subject of discussion this evening is one, which, if precipitately acted upon by this Academy, may, per-

haps, cause many hereafter to regret, that they had not more deliberately, more perseveringly, and upon a larger and more extensive basis of tests and experiments, founded their opinions. The Report of the committee based on the notes from the thirty-eight cases, through which the committee prosecuted their investigations, is, undoubtedly, the result of determined endeavors to arrive at the truth. No one, I think, could have listened to the reading of that Report, without being impressed with the belief, that the opinions expressed and deduced from the facts it contained, were the deep and solemn convictions of independent, candid, and truthful investigators. I must confess that the first blush of the impression which the reading of the Report made upon my mind, had a strong tendency to carry me away in opinion with the committee. But, reflection since has cooled the ardor of my first impression. When I recall to my mind, and review the events of the past, which accompanied the introduction to the public, or to the body more particularly interested, of almost every then new invention, and advance upon the knowledge and practice of mankind, in almost every relation of civil life, having science and art as its basis ; when I reflect upon the unmerited obloquy, through both oral and written reports, which was heaped upon the devoted heads of many of the authors and originators of these *then* called impracticable innovations, and self-delusive moon-stricken theories ; but which are *now* the well established, indisputable, irrefragable facts and data of science and art, upon which still farther advance and improvement can be more readily made ; when I consider, in short, the unbelief and contumely thus directed, which pursued these benefactors of their race throughout the whole course of their lives, and even in some instances long after the deposition of their remains in the silent tomb, over which, however, awakened and more enlightened posterity erected reverential monuments ; it would be absurd in me, and, as I humbly conceive, premature in any one to pronounce a decisive opinion on the questions before us, from the meagre and inadequate, though sufficiently honest and earnestly directed, investigations of the committee alone. It will be remembered, some years ago, when Prof. Horace Green first announced to the profession, the practicability of entering the larynx, that a hue and cry was immediately raised against the extraordinary announcement ; and that some distinguished professors of surgery and anatomy, even pronounced the *thing*, as they called it, an anatomical impossibility. Now, however, how do matters stand ? How many physicians will you find at home or abroad, who will confess that

they cannot enter the larynx with the tube and the sponge probang? And those who admit that they are conscious of having done so (and there are many such), are they to be considered as self-deluded, like Dr. Taylor of the Report?

Moreover, if there still remains any echo of that original hue and cry, surely the declarations contained in the Report of the committee will suffice to annihilate it, for it is admitted that they succeeded in entering the larynx—this Crimean Sebastopol, so to speak, of the whole field of controversy, which, when taken by surprise, or when entered by the necessary skill and tact, all the other problems connected with the subject, require but a little time and experience to effect their “satisfactory” solution. I am, therefore, not at all surprised that the English and French allies, Professors Erichsen and Trousseau, are still before the walls of Troy. So far, then, the Minority of the committee may congratulate itself on no inconsiderable advance, towards the general adoption of the truth of the remarks contained in its Report. But, it is said, that the rational signs consequent upon the introduction of the instrument into the larynx, were so alarming and imminent of suffocation, as to have led them (the committee) to the conclusion—how premature!—that the accomplishment of the introduction was by no means so frequent as it was generally supposed, and that in those cases by others, where it was asserted that the instrument entered the larynx; if these rational signs were absent, the instrument, instead of having entered the larynx, passed down into the œsophagus only. I hope the committee will excuse me, if I decline the acceptance of this oracular conclusion.

I remember, many years ago, listening to a lecture delivered to his class, by the distinguished and learned chairman of the committee on this Report. He was speaking of the introduction of the male catheter into the bladder, and, in the course of his remarks took occasion to eulogize the practice of a Parisian Surgeon, for the skill, rapidity, and address with which he performed this simple operation; and to say that it was alone worth a trip to Paris, to witness his execution of it. I must conclude, then, that that estimable gentleman, the chairman of the committee, has faith in the possibility of acquiring an eminent degree of skill and address in the use of catheters. Why, then, I would respectfully enquire, was there no allusion made to the possibility of the possession of this accomplishment by many of his contemporaries at home, in the catheterization of the air-passages,—a far more nice and intricate an operation; and presenting a field equally as interesting, and less explored, for the exercise of American genius and talent;

which,—I may say without any sacrifice of modesty, as I am not a native born American,—is second to none on the civilized globe. And why, I would again enquire, would it not be as reasonable to infer that the alarming and threatening symptoms of suffocation witnessed, were due to the absence of this accomplishment in their manner of operating, as to infer and conclude, that because these symptoms were absent in the operations performed by others, it was positive proof that the instrument had not entered the larynx at all, but passed down into the œsophagus instead ! unless, indeed, it is generally conceded that all science, and all art, are centred in the minds and hands of the majority of the committee.

Dr. J. O. Stone considered that, as one of the committee, he was called upon to reply. That it had been inferred, that the reason of the failure in passing the instrument into the trachea, was from a want of skill upon the part of the committee ; but the truth was, the committee surpassed the author of the paper, having, as may be seen in the Record, repeatedly succeeded, when *Dr. Green* had failed. *Dr. Stone* then mentioned the instances bearing upon this point. He thought that the committee had taught the author something, viz : that the curved probang would pass where the nearly straight one would not. He then restated the honesty with which he went into the investigation ; that from the overwhelming character of the Paper, the committee were necessarily very careful, and that “ not satisfactory ” marked their prudence in giving an opinion in instances where they should now speak more decidedly. *Dr. Green* gave no reasonable symptom why he considered the tube passed into the trachea ; in certain cases he said it was in the trachea, but he could not say why he knew it to be so. *Dr. Green* had brought no cavities to be injected. In the only case mentioned where the patient died, *Dr. Stone* allowed that he might have died at any moment ; that he did not lay much weight upon that case. The Minority Report, curiously enough, says it discards all the Bellevue Hospital cases, and yet it takes all the favorable cases and includes them in their estimates !

Dr. Barker said : He had listened with deep interest and fixed attention to the remarks made by the gentlemen who had preceded him, relative to the subject now under discussion. He had heard with undisturbed equanimity the various criticisms which have been offered on the papers which he had the honor to read before the Academy. But he had yet to hear the first argument against the possibility of topical medication after the manner proposed by *Dr. Green*. He had yet to hear the first argument against the practica-

bility of the operation, based on *science*, that is to say, based on the anatomy and physiology of the parts implicated in the operation. On the contrary, its practicability, under *certain* circumstances, and in a *certain* percentage of cases, is conceded—conceded by the majority of the committee, in their Report, and conceded by every speaker to-night. The question, then, comes up, under *what* circumstances is it practicable? Dr. Green says, after the parts have been properly prepared.

Dr. Watson asked if anything was said in the Paper of Dr. Green relative to such preparation.

Dr. W. Parker said there was nothing of the kind stated in the Paper which was before the committee.

Dr. Barker resumed: He did not desire to engage in the discussion of side issues, but he was ready to examine all points. The necessity for previous preparation of the parts was insisted upon by Dr. Green in his first work, published eight or nine years ago. It was also stated to be an essential preliminary, in the Paper which Dr. Green read before the New York State Medical Society, at their meeting on the first of February. Dr. Barker then read the concluding paragraphs of this Paper.

Dr. Green interrupted to say, that in his first Paper, read before this Academy, he did not think it necessary to allude to previous preparation of the parts, as he supposed all in this city understood his views on this point. But in his Paper before the State Medical Society, he had strongly urged the necessity of this preliminary condition, as some there might be ignorant of its importance.

Dr. Barker continued: The Records of the committee show, that when Dr. Green was before them, he distinctly stated this to be a necessary preliminary condition. Dr. Barker illustrated this part of his argument by referring to the preparation for operation for cataracts, by dilating the pupil with belladonna. Now, who will say, that the experiments of the committee would not have been successful in every instance, if the patients had been subjected to the proper preparatory treatment?

It has been proposed, that the committee of the whole, recommend to the Academy, to adopt the "conclusions" of the Majority Report. But no one has given any reasons why the Academy should adopt this course. One gentleman (Dr. Detmold) says that the reasons are contained in the Report itself. The first conclusion of the Majority Report is, "catheterism of the air-passages dates its history from the time of Hippocrates." Is there, in the Report, any reason

given for this conclusion? Does medical history furnish any proof of the truth of this statement? Will the Academy stultify itself by adopting such a conclusion as this, without either proof or reason? The second conclusion of the Majority Report is, "the best evidences of the passage of an instrument into the air-passages, are the rational signs." As an abstract proposition, this may be admitted; but as defined by the Report, is it true? The committee give the following as the rational signs: [Dr. Barker then read from the Report.] (Vid. p. 53, vol. iv., of this Journal.) Yet their Record shows, that in three cases, Wiley, Messmore, and Griffin, where the tube, as they admit, was passed into the trachea, these signs were absent.

Dr. Stone asked if *Dr. Barker* did not regard "breathing through the tube" as one of the signs of the passage of the instrument.

Dr. Barker replied: Yes, he accepted that. But the other signs were all absent, as their Record proves, in three cases where the tube was passed. Now, if it may be passed in three cases without producing these phenomena, why not in thirty or three hundred. Is there any ground for saying, "experiment unsatisfactory," merely because these signs are absent? The truth is, what the committee call "rational signs" of the passage of an instrument into the trachea, are merely the signs of irritation of the entrance into these passages, or of obstruction to the admission and exit of air, neither of which conditions are absolutely necessary.

As regards the third conclusion of the Report, it is sufficient to say, that it has already been proved, that the facility of the operation depends upon the state of the parts involved, and not upon the curvature of the instrument.

The fourth conclusion is, "there is no reliable evidence in the opinion of the committee, that the sponge probang has been passed through and beyond the vocal chords." The passage of the sponge probang did not legitimately pertain to the duties of the committee. But, said *Dr. Barker*, I am ready to discuss this point in the committee of the whole, where a large latitude in debate is admissible. *Dr. Barker* then mentioned five tests, which he considered "reliable evidence" of the passage of the sponge probang.

1st. The operation on the cadaver. This has been repeatedly accomplished, both in this country and in England, and, said *Dr. Barker*, if I am not misinformed, the secretary of the committee has seen it done.

2d. The tests given in the original Paper of *Dr. Green*, viz: where the sponge is attached to a pervious handle, respiration through the

tube ; the extinction of a lighted lamp, by blowing through the tube ; the inflation and collapse of a piece of bladder attached to the outer extremity of the handle, &c., &c.

3d. Seeing the sponge where there is an opening in the trachea. This has occurred in two instances, one is a patient of Dr. Green's, in whom tracheotomy was performed in a Dublin hospital some years since. The patient wears a tube, and the sponge has been repeatedly passed in contact with the tube. The other case is a patient of Dr. Carnochan's, who cut into his trachea while in the delirium of fever. The wound has healed, but there is an opening in the trachea. Dr. Green passed a sponge down *through* the vocal chords, and it came out through this opening.

4th. In some patients, the sponge, when passed down the trachea, can be distinctly felt, externally, near the upper edge of the sternum. It can never be felt externally when passed down the œsophagus.

5th. In one patient of Dr. Green's, there is a stricture of the œsophagus, about four inches from the pharynx, through which the sponge cannot be passed, yet it is passed down *somewhere* ten or eleven inches.

Dr. Barker said : He was ready to examine the other conclusions of the committee, but he had come to-night to listen, not to talk, and he should wait to hear some reasons why they should be adopted, before he would attempt to combat them.

Dr. McNulty stated that he had made many dissections, and investigated the subject thoroughly. He was prepared to lay his investigations before the Academy, and with their permission, he would do so. The gentleman then proceeded to demonstrate, with considerable volubility, the minute anatomy and physiology of the larynx, from a diagram, and also a preserved specimen of the parts, he had prepared for the occasion.

From the fact that nature had placed a greater number of muscles to close the glottis than to open it, he concluded she never intended it to be entered. And from the fact that the base of the tongue and the glottis were supplied by branches of the same nerve, he said it was impossible to take the parts by surprise and pass through the glottis, for the moment the tongue is depressed preparatory to the operation, the parts take the alarm and close, so that it is impossible to enter the larynx at all. He had used the sponge probang a great many times, and used to think he passed it into the trachea "pop goes the weasel right straight along." But since he had made these investigations, he was convinced that he never did it.

Dr. A. K. Gardner thought the gentleman had proved exactly the opposite of what he had attempted. He had not himself come to any definite opinion, but if these nerves were so sensitive, and the information they gave so instantaneous, it seemed plausible that the importance ascribed by the writer of the original Paper to previous modification of the parts, was all-important. The citadel might be taken by bribing the sentinels, by previously dulling the sensibility of these guardian nerves by the preparatory application of the nitrate of silver to the glottis, epiglottis, &c. The watchmen would thus sleep upon their posts, and Sebastopol might be taken.

Comparative anatomy might teach something ; at least, it would tend to show that if the trachea of lower species of creation would bear topical application, that of the man might. Chickens have a disease called "pip." It is probably an inflammation of the air-passages, accompanied with an effusion of coagulable lymph. From the stringy appearance, it is supposed by the ignorant to be "worms in the windpipe." Blunt-pointed wires, shaped like a corkscrew, and pledgets of cotton dipped in spirits of turpentine, have both been used as remedies.

Dr. Sayre said that he was amazed that any man should come before that Academy with a drawing and attempt to prove that it was an anatomical impossibility to enter the larynx, when every surgeon had been called upon to remove foreign bodies from the air-passages; and if foreign bodies can get there by accident, why cannot the surgeon pass instruments intentionally? So frequently does the accident occur, that a whole volume is devoted to the subject of foreign bodies in the air-passages, by *Dr. Gross*. He was satisfied that the tube could easily be passed. He had seen it done. He had witnessed a case of *Dr. Green's* where there was no doubt of this fact. The instrument was introduced without producing any of the alarming symptoms stated in the Majority Report. *Dr. Sayre* then closed the mouth, and held the nostrils shut, so that no air could in any manner enter the lungs except through the tube. He was determined to test this case thoroughly. The patient breathed thus for some ten or fifteen minutes. He then showed signs of suffocation, and *Dr. Sayre* was on the point of opening his nose and mouth, but *Dr. Green* said that the trouble arose from the tube becoming stopped with mucus. He then blew forcibly into the tube,—the patient was instantly relieved, and remained a considerable time longer in this condition, breathing without trouble through the catheter.

Dr. Sayre thought such evidence indisputable ; and if it could be

done once, then why not a million times. As to the introduction of the sponge probang, all he had to say, was that if a sponge was attached to the end of a tube, and the tube introduced, and respiration carried on for an indefinite period through the tube, and then the tube being withdrawn and the sponge found still attached to the end of the tube as at first, he considered that conclusive evidence that the probang could be introduced. In reference to the utility of the treatment, he had not made investigations, as he was devoted to a different branch of the profession; but he thought more time was required to report upon that part of the subject satisfactorily. He considered the Majority Report incomplete. Their investigations were neither sufficiently numerous nor earnest. They had given the signs by which it could be known whether the tube was in the trachea or œsophagus, and yet many of their cases are reported *unsatisfactory*. We want to know why they are unsatisfactory, why they cannot tell whether it is in, or not. They should have examined into the cases treated by injections, for chemistry made it easy enough to ascertain whether it went into the trachea or œsophagus, from the fœces. He wanted a more reliable report, one that would stand the test of time.

Dr. Green said : I thank the gentleman, Mr. Chairman, for the interesting anatomical lecture to which we have just listened. It is probable that Marshall Hall, to whom the lecturer has alluded, understood, as well as any man, the anatomy and physiology of the larynx, and the nervous influences belonging to this organ. He, one time, entertained a similar opinion, that the introduction of a foreign body into the larynx, as proposed, would prove fatal to animal life. This he declared when in this country ; but he had an opportunity, subsequently, of seeing, first, a tube introduced into the trachea of a dog, by Prof. Brainard, of Chicago ; and, afterwards, of witnessing at my office, the operation of cauterizing the larynx and trachea repeatedly ; and this, his former opinion, he renounced, which renunciation was contained in a lecture that was published in the North-western Medical and Surgical Journal (vol. 2, N. S., p. 151).

But, as I stated, I have other remarks to make, and if the Academy will allow me, should like to offer them now. (Leave being granted, *Dr. Green* continued).

Mr. President : In the Paper which I had the honor to read before this Academy, at its session in December last, and which occasioned the appointment of this committee, whose reports we have heard, I announced at the conclusion of my thesis : "that the direct medication of the lungs, by means of catheterism of the air-tubes,

an operation not before performed, had been accomplished—that the operation may be performed by the dexterous surgeon, with ease and facility, and with perfect safety to the patient ; and that the results of this method of treating disease, whether employed in bronchial affections, or in the commencement of tuberculosis, had already afforded the most gratifying indications, that practical medicine will be greatly advanced by this discovery.” These propositions are still maintained.

Two important inquiries are included in the above declaration ; inquiries which it became the duty of your committee, so far as opportunity and observation enabled them to do it, definitely to settle. These questions, as understood, and stated by the committee, are :

1st. Can the passage of the instrument, as proposed by the author, into the air-passages, be effected ? and,

2d. What benefits are to be derived from the injections of nitrate of silver into these passages ?

These, Mr. President, it seems to me, are, very plainly, the subjects of inquiry that claimed the attention of your committee.

To the consideration of the first question, they have given time and attention ; but it must be evident to every one, that the second inquiry cannot be settled without occupying much time, and carefully observing many cases.

The truth of the first declaration to which I have referred, namely, that of our ability to introduce a flexible tube into the trachea, your committee have fully established ; for they declare, that in *eleven* cases observed by them, “the operation was performed to the entire satisfaction of the committee ;” and this was accomplished in patients, who, with very few exceptions, were under circumstances the most unfavorable for success ; as the testimony you have heard, has proved. If, however, with such embarrassments, success in eleven instances crowned our efforts (although we maintain that the operation was accomplished in a much larger number of cases), what shall hinder its repetition ; if beneficial, what shall prevent the perfect performance of the operation, in as many hundred, or even an unlimited number of cases, where all the required preliminary conditions are observed ?

With regard to the subject of the *peculiarity* of the instrument employed—whether “much curved,” “slightly bent,” or recti-linear—a question which really seemed to be, in the minds of the committee, one of mighty import, is a matter about which I am not disposed to differ with them in opinion.

The committee have found out, and admit, that the performance of the operation *is* possible ; and if they have also been able to devise any improvement in the form of the instrument, or in the method of operating, I shall be as ready as they are, to rejoice in the attainment. But to this subject I shall again refer.

There is another side issue, which the committee have forced into this investigation, that is altogether irrelevant to the main point of inquiry.

Although it is admitted that a tube, one-fourth of an inch in diameter, can be introduced into the trachea, yet, say the committee, " we have from this no reliable evidence that a sponge probang can be passed into the same canal." Indeed, the committee profess to have satisfied themselves, that the failures in attempting this operation, were an hundred per cent. In short, that it was not accomplished at all ! Mr. President, I shall not stop to argue a question that has been settled by a thousand unanswerable facts ! Why, sir, there are men on that committee, who have again and again performed that operation, and who know they have done it ! There are fifty members of this Academy, who have repeatedly passed the sponge into the larynx and trachea, and who can testify to its accomplishment. The admission of the passage of a tube, makes the denial of the introduction of a sponge probang through the same calibre, positively absurd ! If a tube one-half, or even one-fourth of an inch in diameter, can be carried through the trachea, cannot a sponge probang of an equal diameter, soft and easily compressible, be introduced through the same opening, and along the same canal—what shall hinder ?

Why, sir, at one of the meetings of your committee, after first obtaining from its chairman the admission, that the operation I proposed would be conclusive in establishing the fact of the introduction of the instrument into the larynx, I passed one sponge more than half an inch in diameter into the trachea, and leaving it there, quickly introduced another of the same diameter into the œsophagus, which last was passed rapidly up and down in the œsophagus, several times, without coming in contact with the first sponge, or disturbing it in the least degree.

Within a few days, since these reports were made to the Academy, I had an opportunity of proving in another way, the positive performance of this operation. My colleague, Dr. Carnochan, has under treatment a young man, who, a twelvemonth ago, in a fit of insanity, attempted suicide by cutting his throat. The wound was

never perfectly healed, for a small, permanent opening into the trachea still remains.

At the request of Dr. Carnochan, and in his presence, I passed, at the second attempt, and without difficulty, a sponge probang, a little over half an inch in diameter, "slightly curved," into the larynx, through the rima-glottidis, until it made its appearance at the opening of the trachea.

In another patient on whom the operation of tracheotomy had been performed, I introduced the probang, a few months ago, repeatedly in the same manner, in the presence of several physicians, through the trachea, down to the external opening.

But, sir, if my experience and my testimony are to weigh nothing, when opposed to the preconceived opinions of your committee, shall the testimony of such men as Bennett, of Edinburgh, and Watson, of Glasgow, and Cotton, and Hastings, and Alison, and Mackness, of London, and Bowditch, and fifty others eminent in the profession, in this and in other countries, all of whom have testified, not only to the positive performance of this operation by their own hand, but to its great utility in the treatment of disease. Shall their testimony, I say, not be received, because it is directly opposed to that of your committee? Many of these gentlemen have had most extensive experience in the treatment of disease, by topical medication, and several of them had expressed publicly before trial, their disbelief in the practicability of the operation, and yet, after being convinced of their error, they have had the magnanimity to admit it. One of the vice-presidents, Dr. Detmold, advises that we wait till we hear opinions on this subject, from Europe. We have already heard, sir, and I will briefly refer to the testimony of a few of these physicians.

Dr. Cotton, one of the physicians of Brompton Hospital, says, in regard to topical medication of the respiratory passages (p. 236), "my own views upon this subject differ from those I formerly held, and have even expressed; and I owe this change to the kindness of Dr. Horace Green, of New York, the justly celebrated advocate of this treatment, who, during a recent visit to our metropolis, convinced myself and others, not only of the possibility, but of the safety and usefulness of the practice.

"I had long been in the habit of using a solution of nitrate of silver, to the pharynx and upper surface of the epiglottis, by means of a soft brush in all the early cases, both of laryngeal and pharyngeal complication; and had frequently witnessed its good effect, not

only upon the part to which it was immediately applied, but upon the laryngeal structures also, attributing it, in the latter case, to an action excited in the upper respiratory passages, from continuity of the mucous membrane. But, I had never ventured to apply anything directly to the larynx itself ; not from any doubt as to its possibility, but from misgivings as to its effects and apprehension of its danger. For some months past, however, I have done so extensively in cases of chronic laryngitis, whether idiopathic or tubercular, and very frequently with marked success."

Dr. Hastings, in his work on "Diseases of the Larynx and Trachea," gives many cases in which he cauterized the larynx and trachea ; and of the treatment remarks, "I call it a discovery, because it was previously, and by most practitioners is still, believed to be utterly impossible to pass any foreign body into the larynx and trachea, without producing violent spasm, or even suffocation. Such opinions have often reached me, coming from men occupying the highest walks in their profession, who ought to be imbued with a sufficient degree of liberality, to prevent the condemnation of a practice, or, indeed, the denial of its practicability, for no better reason than that they do not understand it themselves."

And Dr. Watson, after describing minutely the manner of performing the operation, and the many preparatory steps to be taken, says : "I would not, in all probability, have thought it necessary to be so minute and pointed on this topic, had I not read, and read with great astonishment, in a system of surgery very recently published in this country, that the author 'has no hesitation in expressing his conviction, that the sponge has never been passed, in the living subject, beyond the true vocal chords.' This statement he founds on the structure and physiology of the parts concerned, and on 'repeated observations' which he has made in cut-throat cases, and on the dead subject."

"I have already shown how little reason he has to found such an opinion on the structure or physiology of the larynx ; and in regard to his 'repeated observations,' I can only express my regret that any teacher of surgery should be either so lamentably wanting in manual dexterity, or so inexcusably warped by preconceived ideas, as the above statement would seem to indicate regarding its author. Certain it is, as we have seen, that much larger bodies than the laryngeal sponges have been passed both upwards and downwards through the rima-glottidis of many living persons ; and every one can make trial for himself how easy it is to introduce such instruments into the

trachea on the dead subject. Over and over again, even since reading the learned professor's statement, have I performed this experiment, and I venture to say, that in all my *repeated observations* of this kind, I never experienced the very slightest difficulty. It is, therefore, sincerely to be hoped, that he performs with greater dexterity, and observes with less prejudice, operations upon other regions of the human body, both dead and living, than he seems to have done that of the passage of the sponge probang into the trachea."

"I need only now remark, in conclusion, that after the probang has been passed through the glottis, there is no obstacle to prevent its being carried down the whole length of the trachea." *

Still, it is admitted that a *tube* of a certain form can be introduced, but the committee recommend an instrument to be used "bent with a curvature corresponding to a circle of six inches in diameter;" and they affirm, in their report, "that such an instrument" can be introduced, with much certainty, into the air-passages, "but the instrument selected by Dr. Green, as the one he is accustomed to use in his practice," they add, "and which is only slightly bent at its extremity," "fails in entering the air-passages in about 90 per cent. of the trials."

Throughout the Report, much stress is laid upon this particular form of the instrument, as if it was something quite new, and altogether necessary to the success of the operation. This is all very well, and of but little importance; but it would have saved the committee some trouble in this matter, as well as on other points, if they had taken the pains to examine my work on these subjects, the first edition of which was published nearly ten years ago. They would then have ascertained that an instrument of nearly the same curve was at first recommended and used by me. On page 208 of the work to which I refer, is the following: "The instrument which I have always employed for making direct medicinal applications into the cavity of the larynx, is one composed of whalebone, about ten inches in length. * * * * The extent to which the rod is to be bent, must be varied according to circumstances; for the opening of the glottis is situated much deeper in some throats than in others; but the curve which I have found suited to the greatest number of cases, is one which will form the arc of one-quarter of a circle, whose diameter is four inches." But I soon found that such an instrument, al-

* On the Topical Medication of the Larynx. By Eben Watson, M.D., Lecturer on the Institutes of Medicine, in University of Glasgow, &c. London edition, pp. 27-8.

though it could be introduced with more certainty within the larynx, yet it could not, when thus bent, by any possibility, be "thrust down between and beyond the vocal chords." When, therefore, it became necessary to reach disease further down, I gradually lessened the diameter and extent of this curve, until, after much experience, and many trials, it was ascertained, by having the head of the patient thrown well back, so as to bring the mouth as near as possible in a line with the opening of the glottis, that an instrument "with the small curve," or nearly straight, may be introduced any required distance into the trachea, "with much ease, and, ordinarily, with much certainty." And the assertion is here emphatically reiterated, that, after this manner, and with these necessary conditions premised, "the sponge-armed probang may be, and has been, in a thousand instances, thrust down between and beyond the vocal chords, and has been carried, not only through the trachea and its bifurcations, but has been passed at will into the right or left bronchial divisions." The day is passed, thank heaven and the spirit of progress, when hypotheses, or preëntertained opinions, can be received for facts in medicine.

That the table of rational signs, which the committee have enumerated as constituting a "rule, to which, ordinarily," they say, "there are no exceptions," to prove the introduction of the instrument into the larynx, is wholly unreliable, can be established by facts in both physiology and in practice. These rational signs, such as "suffusion," "turgescence," and "lividity" of the face; with violent spasmodic cough, and loud and stridulous breathing, &c., &c., symptoms which the committee positively aver are "the surest criterion of the success of the operation," these are the certain signs, not of the successful, but of the *mal adroit* operation! The *laryngismus* which occurred in so many of the patients, subjected to the experiments of your committee, originated in the neglect to employ appropriate preparatory measures, and in the presence of mental excitement, and direct physical irritation. The *causes* which were present in all these cases, are precisely those which Marshall Hall has enumerated as belonging to, and as being always productive of, laryngismus and trachelismus. They were, great *mental excitement*, and *irritation of the laryngeal nerves*.

Dr. Hall speaks of the following, as among the irritations, which, acting in "a reflex or diastaltic manner," produce laryngismus or spasm of the glottis:

First, the *moral*, such as "excitement," "fright," &c.; and second, *irritation* of the recurrent laryngeal nerves; these, acting through the

medulla oblongata, induce spasms of all the muscles of the neck, and the result, he declares to be, "compression of the external and internal jugular" veins, followed by congestion of the face, eyes, and neck," with "suffusion," "tumidity," "lividity," and "distention of the veins," together with temporary "paralysis of speech."

Now, if the Fellows will turn to the rational signs as "tabulated," on page 230 of the "Transactions," they will find a remarkable correspondence between those there recorded, and the symptoms of *laryngismus* and trachelismus, as enumerated by Marshall Hall. In fine, complete *laryngismus* was produced in many of the patients operated on by your committee, in consequence of their unprepared condition, and by reason of the rough manner in which the operation was performed.* They have therefore made the fatal mistake of adopting the symptoms which attend laryngismus, as the "rational signs," which, they declare, *must be present*, whenever the tube, or sponge probang, is made to enter the air-passages.

When your committee, Mr. President, are better acquainted with the true physiology, and the peculiar nervous organism, of the upper portion of the respiratory tube,—concerning which, most erroneous ideas are entertained, by many of the profession,—they will most assuredly find that these recorded rational signs of their's are erroneous and unreliable; that they cannot be established as furnishing the "rule" they propose. They will find, that when the operation of injecting the air-passages is appropriately performed, the tube can be introduced into the trachea without producing any violent spasmodic action; often, without being attended by any severe cough, or by any other unusual disturbance whatever!

The declaration of this *truth*, in practical medicine, I make, as being positively established. For the disproof of it, I challenge all *fair* and scientific inquiry.

Dr. Green here again described particularly the way in which the operation should be performed, and spoke of the absolute necessity of having the parts involved in the operation properly *educated*, before the attempt should be made to introduce the tube into the trachea.

* Whenever the operation was performed by any of the committee, or by *Dr. Taylor*, it was done, ordinarily, by thrusting one or more fingers of the left hand into the mouth of the patient, and "feeling for the epiglottis with the index finger;" retaining the finger in this position, the tube, stiffened by the wire, was passed over its extremity and the opening of the glottis *felt* for, with the curved end of the instrument. Of course "direct irritation" was thus communicated to the nerves of the larynx, and a spasm of the glottis produced, with great certainty.

Dr. Beadle inquired if the Paper read before the Academy contained any such directions?

Dr. Green said it did not. His work, which was published nearly ten years ago, a copy of which, at the time of its publication, he had presented to the chairman of that committee, contained full and explicit directions on this subject; and he did not consider it necessary, at this time, to repeat these directions to the profession of New York. But, in the Paper which he read before the State Medical Society, two months after the reading of the one before the Academy, and which was a continuation of the same subject, these directions were given, because he was aware that there would be those present at that meeting to whom the whole subject would be new.

As copies of the Transactions of the State Medical Society were present, *Dr. Barker*, at the request of some member, read the following, as the directions given by *Dr. Green* in his Paper:—"Nature has so guarded the opening into the aërial passages, that the operation we propose, catheterism of the bronchial tubes, it will be found, is one difficult to be accomplished, and it should never be attempted until the parts implicated, are *thoroughly educated* by the necessary preparatory operations. These operations consist in cauterizing successively the pharynx, the opening of the glottis and the larynx, for several days (for even weeks, if necessary), before the introduction of the injecting tube into the trachea and bronchi."

It was the neglect of these *preparatory measures*, said *Dr. Green*, together with the *excitement* produced by the presence of so many persons, that caused the failure in many of the patients operated on by, and before, the committee. In those cases treated at Bellevue Hospital, not a patient was in any degree prepared. A few applications of the caustic had been made to the pharynx, only. In not a single instance had a solution of the nitrate of silver been applied to the epiglottis, glottis, or larynx. This was admitted by the young physician who made the applications. Consequently the peculiar nervous irritability of the opening of the larynx, had been in no degree allayed; and the result was, the occurrence of spasm, at almost every attempt to introduce the tube; and so with regard to the cases seen at his own office, the operation was performed with the utmost difficulty, because of the very great excitement induced in his patients, by the presence of so many strange Doctors.

Dr. Green was ready to perform the operation before any and every member of the Academy, coming singly and quietly to his office, and he pledged himself to its successful performance.

Dr. Watson inquired, and *Dr. Green* explained, what the latter meant by passing the tube, at will, into the right or left bronchial division.

Dr. Beadle desired to know if *Dr. Green* had not claimed to be able to pass the tube "at will" into the lungs, and inject tubercular cavities.

Dr. Green said : He had never made any such claim whatever, and he requested that those who were so much disposed to criticize and catechize him, would read with more care what he had written, and not lay to his charge that which did not belong to him. He had on no occasion said, that cavities could be, or had been injected ; he had only suggested the inquiry, "what should hinder this operation under favorable circumstances."

Dr. Beadle referred to the title of the Paper read by *Dr. Green*, as proof that he claimed to inject tubercular cavities.

Dr. Green requested that what he had written should be read. It was read, and is as follows : "After accomplishing what has already been described, namely, that of introducing the elastic tube into the bronchial divisions ; for it must have passed several inches into these if it entered the trachea—these questions occurred to my mind : What shall now hinder the introduction of medicinal agents through this tube into the lungs, or directly into the bronchi and their terminations ? What will prevent the injecting, even of a vomica, under favorable circumstances, with appropriate remedies ?" The favorable circumstances which were referred to in this inquiry, said *Dr. Green*, were such as when cavities communicate with bronchial tubes, and are not seated in the upper portion of the lungs, &c.

Dr. Beadle, still persisting in the attempt to prove his point, read from *Dr. Green's* Paper in the State Transactions, the following from page 224 : "Between this period and the 6th of December, when the subject was brought before the Academy, there had been treated for a longer or shorter period, thirty-two patients, laboring under tubercular or bronchial diseases, by the direct introduction into the lungs of a strong solution of nitrate of silver, injected through the elastic tube."

Dr. Green said all that was true, but the *lungs* were not *tubercular cavities* !

Dr. Watson did not think it right to cavil at words,—the meaning of the author, he thought, should be received.

After several other inquiries, *Dr. Green* desired to know of the

chairman, if he could now be permitted to go on with his remarks. The chairman said he had the floor.

Dr. Green continued : With regard to the Report of your committee on the subject of the second inquiry, with which they were charged, I have but little to offer.

The propositions made in the Paper which was submitted to this Academy, and to which I have referred ; that this operation is entirely practicable, and of utility, are still maintained, with the additional declaration, that since the reading and publication of that Paper, over forty cases of bronchial disease, of spasmodic asthma, and of early and advanced tuberculosis, have been treated, for a longer or shorter period, after this manner of topical medication, in all of which, the tube was introduced into the trachea, in a greater or less number of instances, and a solution of the crystals of nitrate of silver injected through the tube into the bronchial divisions ! And it is still further maintained, and declared, that under this local treatment, those patients affected by the first two diseases, viz : chronic bronchitis and spasmodic asthma, have not only all improved more or less, but have in many instances been restored to health ; while, in tuberculosis, although the treatment has not afforded evidence that it will prove curative, yet in all these cases which have come under my observation, it has operated to lessen the cough, and to diminish the amount of expectoration. All these cases, Mr. President, might have been seen by your committee, for they were urged to visit my office daily, singly, or collectively, and to observe, and note, the effect, the progress, and the results of the treatment.

There are men on that committee, Mr. Chairman, in whose integrity of purpose and just intentions, I have the fullest confidence ; but, sir, they neglected to avail themselves of that information, which they might have obtained, and from which alone, correct opinions can be formed ; and allowing their judgments to be influenced by the expressed opinions of others, have subscribed their names to "conclusions," which are positively unjust, and altogether fallacious ! Had these gentlemen of the committee to whom I refer, complied with the urgent request which they will do me the justice to say was made them, to visit quietly, at my office, as a hundred other physicians have done, and see for themselves the performance of this operation of catheterism, and have observed its effects upon those who were the subjects of it, these gentlemen could not have been persuaded to place their signatures to that Majority Report. How, I ask, are they able to declare from their own personal knowledge,

"that the sponge probang has not been, and cannot be passed through and beyond the vocal chords?"

On what observations made personally, or in committee, can they aver, that these injections in a great majority of instances, "have passed directly into the stomach?" And on what evidence do they rely, when they testify, as they have done, by signing that Report, that the operation which has been approved of by more than fifty other intelligent physicians, who have witnessed it repeatedly, and have observed its beneficial effects, that this operation is one "fraught with danger as well as difficulty?"

If, as the committee assert, these injections in most instances passed into the œsophagus, instead of the trachea, this fact could have been ascertained, and it was the duty of the committee, as scientific inquirers, to have made the necessary examinations to establish this point, and not to have substituted *opinion* for truth. Dr. Heller, of Germany, has performed experiments which are conclusive, to ascertain to what extent the nitrate of silver, when internally administered, is taken into the secretions and excretions. He administered this salt in many cases of epilepsy, in doses varying from three to twelve grains, daily, for a period, in some instances, of three months. The blood and the urine of these patients were examined several times in many cases, but after the most careful examination, not the slightest trace of silver could be detected in either of these fluids. But the *feces*, Heller declares, contained in the form of chloride, the whole of the silver by weight, which had been administered. (Heller's Archives).

During the six months which intervened between the appointment and the Reports of your committee (and it was just six months to a day), they had abundant opportunities; no committee could have enjoyed better to observe in these more than forty patients, not only the certainty with which the operation is performed, but its effect upon disease in these cases.

In that Paper read before this Academy, are reported several cases of great interest, in the treatment of which these operations were frequently performed. Why have not the committee made some inquiries with regard to the results in those cases? Why not inquire respecting the patient, Mr. President, whom I had the honor of attending in consultation with yourself, and whose case, eighteen months ago, you must have considered hopeless; but who is enjoying better health, now, than at that period? Why not ascertain the condition of "Miss P——," the patient sent to me by Trousseau

himself, whose case, three years ago, was by him pronounced "incurable;" and yet, after having the injecting tube employed more than forty times, has returned to her home, in better health than she has had for many years? And the case, too, of "Miss V——," the patient placed under my care by Dr. Varick, who, under this treatment, has completely recovered, although she exhibited the symptoms of early tuberculosis? Why have not the committee inquired with regard to the results in her case, and in all these cases? inasmuch as these patients were well known to their attending physicians, and their cases were all reported fully in the Paper submitted to this Academy, and to the committee of their appointment.

But, not having done this in a single instance, having instituted no inquiries whatever, with regard even to those *two* patients, seen at my office, into whose air-passages your committee admit that the injections were thrown; having no knowledge whatever from personal observation, of the effects of the remedy as a therapeutic agent, I submit to the candid and unprejudiced portion of the profession, whether, as a scientific body seeking for the truth, they have done justice to the importance of the subject, or to the reputation of the author of the treatment?

I shall close my remarks on this part of the subject, with the words of Marshall Hall, in his late great work on the "Diastaltic Nervous System :"

"It was my misfortune," says the discoverer of "the laws of action of the spinal system," "to submit my discovery to the judgment of the Royal Society, at a time when its council was influenced by one unworthy individual. It was rejected!" * * * "*It was not the less the discovery of the function of the spinal marrow,*" he adds. Not the less a discovery, because rejected by the Royal Society. For *truth is eternal*, and although it may be for a time discarded, it is not thereby destroyed?

This method of topical medication, Mr. President, which I advocate, and which has already called forth such adverse and diverse opinions, with regard to its value, was neither hastily nor heedlessly adopted on my part. It came from no search after novelties, or innovation in medical practice; but it originated in a sincere desire to discover some successful plan of treating a disease, hitherto, ordinarily fatal; and it was the result of years of observation, of cautious induction, and of practical measures, conducted with the utmost care, and under a full sense of the attendant responsibility! Nor do I hesitate in this place to acknowledge, that aware of the fallacy of

human judgment, no conclusion was adopted, not a single practical step was taken, without looking for that wisdom which cometh not from man, nor from unaided human judgment, however exalted ! And, *therefore*, it is, sir, that all along during this controversy, have I felt an unwavering assurance, that this practice, whatever may be the present "conclusions" adopted by the profession, with regard to it—that this practice will yet prove the initiatory step to a plan of treatment, which shall ultimately result in positive good to suffering humanity ! The peculiar method by me advocated may prove imperfect, or be altogether abnegated ; yet, shall others, following the lead thus given them, and avoiding the errors and mistakes which I may have made ; continue to improve, until the encouraging prediction uttered by the British and Foreign Medical Review, that "the results of this method of treatment, will lead to important changes in the prophylaxis and cure of pulmonary phthisis," shall be, at length, positively fulfilled.

Before I close, Mr. President, allow me a few words of autobiography ; and I trust the Academy will pardon the apparent egotism, when I assure them it is not on my own account I speak this, *but for the information, and consequent advantage, of my opponents.*

For nearly twenty years—nineteen last month—I have been connected with the medical profession of this city. During all this period I have labored honestly—perhaps injudiciously, at times, but honestly—to improve myself in my profession, and to do all in my power for the advancement of medical education and medical science. How well I have succeeded, I shall leave to the profession of the present and of the *future* to decide. But, in all this time—certainly during the last ten or twelve years—I have not advanced a single medical proposition, or taken a step in medical inquiries, that I have not been met by a certain portion of the profession in this city (and this is well known to many of you, gentlemen), not by a spirit of candid investigation, and fair and honorable inquiry, but by determined opposition and condemnation of any, and of all views by me advanced !

Not that such treatment has come from all the members of the profession, for I here take occasion to say that, from a majority of them, I have received only kindness, and all deserved consideration, for which they have my sincere thanks. And I do not allude, Mr. President, to these facts in the history of medical ethics, or medical *politics*, in this city, with the intention of complaining. Not at all ! for I have no complaints to offer. If the gentlemen who have adopted this policy are satisfied that it is the best plan to advance the in-

terests of the profession, and to improve medical science, let them pursue it.

I have here alluded to the subject, for the purpose of referring to another historical fact ; one which *may* have a greater bearing on the final issue in this controversy, than would, at first, seem probable. At the commencement of the Revolutionary war, four brothers, the sons of a physician of Massachusetts, and who belonged to a company of "minute men," left their home immediately after hearing of the "Lexington fight," and joined the American army. All these brothers fought in the battle of Bunker's Hill, and two of them fell with Warren in that engagement. The third brother lived until the battle of Monmouth, where he was slain, fighting for *truth*, and his country's freedom !

The fourth and last of this band of brothers, lived and fought through nearly the whole of that long struggle for freedom ; fighting by the side of Washington, and Green, and Putnam, and Stark ; at Bennington and at Saratoga, at White Plains and at Monmouth, and, indeed, in almost all the principal battles of that war ; and yet, surviving all, he lived to see his country free, prosperous, and happy ; and to raise to manhood, four stalwart sons, "native born Americans," all of whom, however, save the youngest, have passed away with the patriot father. He, the last remaining one, of that original stock, "still lives ;" and, it is but fair, Mr. President, that his opponents should know, after this more than "seven years" of warfare, that he belongs to a race who, when contesting for what is believed to be justice, and right, *will die with harness on, before they will renounce freedom of opinion, or desert the standard of Truth !*

Dr. W. Parker, chairman of the committee, felt called upon to say something on account of the personalities of the author of the Paper. Much had been said of the enemies of Dr. Green. Now, who are his enemies ? Certainly he was not one. He knew nothing of the systematic opposition spoken of. He could say there was none in the committee. It was as fair a committee as was ever made. When he heard the Paper read, he looked upon it as reflecting credit upon the author, and upon New York surgery. He thought it true, until he investigated it. He would say, however, he thought the author honest, and that he thinks he does what he says he does. But he is deceived. There is no mistake about it. It is as clear as the noonday sun. The Papers are given to the world, and it will soon be settled by their voice. The European world have no feeling in the matter. All he wants is the truth ! That's all. No doubt there is much

in teaching the throat, and he is willing to concede that injections can be thrown into the lungs, and the credit is due to our "associate member." He knows nothing as to the *cui bono*. Time must determine that matter. He said the reason they did not go to Dr. Green's office, was because they would both have been in a false position. They could not talk about, nor examine the operations, before his patients. That was why they went to Bellevue, for there more freedom could be had.

Dr. Watson said he had heard it said that patients whose lungs were said to be injected, were purged after the operation, and inquired if such was the case.

Dr. Gunn said that a lady had been staying at his house who was a patient of Dr. Green's, who was purged every time she returned from Dr. Green's office, where her lungs were injected, requiring opium to control them.

Dr. Detmold said such was the case with the patient operated on by the committee at Bellevue, *where they knew the injection was thrown into the lungs.*

Further discussion was here interrupted, by the lateness of the hour, it being past midnight, in the midst of "the heated term;" and on motion of Dr. Beadle, the committee rose and reported to the Academy that they had discussed the subject given to their consideration, and referred it back to the Academy.

An attempt was made to take a vote of the Academy on the subject, but to no effect, and finally, on motion of Dr. Beadle, it was decided to lay the subject on the table. The Academy then adjourned.

PART VI.—EDITORIAL AND MISCELLANEOUS.

The Academy on Pulmonary Injections.

According to our promise last month, we give a very full and, it is believed, very accurate account of the discussion of the Academy, on Dr. Green's Paper and the Reports of their committee. Again our limits are too narrow to allow us to say what should be said, and we must be content to wait till next month before we discuss these proceedings. This we do, however, without very much regret, as there is no immediate haste for us to say what is necessary, and should the

Academy again take the matter from the table, still new topics may be entered upon. We add, however, a little testimony on topics touched upon by the Majority Report, not because we suppose it will gratify them, or their friends, particularly, but it may be of interest to honest enquirers for truth. The Majority, however, are not inclined to admit the testimony of any patient but Mary Norton, while one of their champions thinks so poorly of patients as to believe that they only echo the opinions of their physicians, as if a sick man did not know when he felt better.

Since this controversy commenced, Dr. Green has received letters from many physicians who, having been themselves the subjects of the local treatment, under his care, have kindly furnished him their testimony with regard to the performance, and the effects, of the operation. As some of these physicians are well known to many of the profession, and as their testimony cannot fail of being of interest to our medical readers, we shall append some extracts from the letters of a few of them. The first is from a letter written by Dr. H. A. Buttolph, physician of the State Lunatic Asylum, at Trenton, N. J.

Dr. Buttolph, who was several weeks under Dr. Green's care, and who reports his case in full, thus speaks of the treatment, and the operation :

"The nitrate of silver, applied by a sponge probang, at first to the fauces, then, as the excitability of the parts subsided, *through* and below the vocal chords, was the treatment prescribed. Of the fact of the passage of the sponge through the larynx, there can be no question. * * * I will say, that I am certain that the introduction into the *trachea* of your sponge probang *No. 80 is possible*, and that I have increasing confidence that a large number of cases may be either cured, or relieved, by this treatment, more *certainly* and *speedily* than by any and every other means now in use * * * I am not a little surprised that professional men in New York should have given the subject of your improved mode of treating diseases of the throat and air-passages so little attention as not even to have become convinced of the reality of your operations.

"I think, however, that this formal and determined effort to disparage the value of your work, will result in benefit both to science and yourself, and that the future will show that the sun did and would shine, even although a few eminent men asserted the contrary.

"I am so in the habit of witnessing optical and other illusions and delusions in the human mind, as results of disease, that I can easily account, humiliating as it is, for similar phenomena when they proceed from pride, or prejudice of whatever kind.

"Hoping that you will let 'patience have its perfect work,' I remain, yours, most truly, H. A. BUTTOLPH."

The following is an extract from a letter addressed to Dr. Green, by Dr. W. Martin, of North Hero, Vermont :

I will briefly state the effects produced by an injection into my bronchial tubes of a solution of the nitrate of silver. The only sensation produced, was one of warmth, which continued three or four hours. My cough and expectoration were greatly diminished, and continued thus, until you made the second injection.

I think that I am now able to answer the question so often asked, "Does the tube pass into the trachea, or only go down the œsophageal tube into the stomach?" In my own case, after four injections, repeated every three days, I can say that I *know* that the tube entered the trachea, and the solution passed through it into the bronchi. I have the following very conclusive evidence to sustain my assertion :

1st. I felt the tube pass between the lips of the glottis, pass the vocal chords into the trachea.

2d. By an expiration, a quantity of the solution was blown through the tube to some distance.

3d. I taste the nitrate in the matter expectorated, for two or three days after the operation.

Yours respectfully,

W. MARTIN.

Dr. A. McAlister, one of the most experienced physicians of Maine, in a letter written some months after his treatment, says :

The sponge was introduced a number of times into my trachea, and in every instance I experienced great relief. I have so far recovered my health that I have attended to my professional business, since about the first of February last, without the loss of a single day. I am now about fifteen pounds heavier than in November, when you first saw me. Then I had had a bad cough for two years, with a good deal of soreness and pain in the region of the lungs, but now I am apparently well. * * * * Finally, it would be hard to convince me, or any other man, who has not only seen it done, but had it passed into his own trachea a number of times, and experienced the beneficial effects of it, as I have, that we can be mistaken, and that it has passed into any other passage than that to the lungs.

Feeling all confidence in your ultimate triumph over all opposition, I remain, yours respectfully,

ASA McALLISTER.

NORTH HAVERSTRAW, July 16, 1855.

Dear Sir, Having noticed by the Medical Journals that a committee appointed by the "New York Academy of Medicine," for the purpose of reporting on the practicability of passing the sponge probang through the fauces into the trachea, have not only called this in question, but doubted the possibility of its being done; permit me to say I believe I am competent to decide in my own case whether the probang entered the trachea or not, and I confidently affirm that repeatedly you passed, in my case, the sponge probang into the trachea;

and from its beneficial effects, I have been entirely relieved from a harassing and debilitating cough of a year standing, and which was continually getting worse, previous to my consulting you, so much so, as to oblige me nearly to abandon my practice, which I have been able since to resume, so far as my throat is concerned, with complete success.

Be pleased, therefore, dear sir, to receive the grateful thanks of one who has been so especially relieved by you.

Respectfully, your obedient servant,

WM. GOWAN, M.A., M.D.

To *Horace Green, M.D., LL.D.,*

Professor, &c., New York Medical College, New York.

SAUGERTIES, July 16th, 1855.

DR. HORACE GREEN :

Dear Sir, Being informed that there are eminent men in the medical profession who deny the possibility of introducing a sponge into the larynx and trachea, I embrace this opportunity of giving to you my convictions in relation to the operation upon myself.

They are such as to leave me no possible chance of doubting that you have on more than one occasion introduced the sponge, saturated with a solution of the nitrate of Silver, into my larynx and trachea, from which I have received incalculable benefit.

You are at liberty to make such use of this as you think best.

Truly yours,

D. D. T. HAMLIN, M.D.

MEDICAL APPOINTMENT.—The recent vacancy at Bellevue Hospital has been filled by the election of Prof. B. F. BARKER, of the New York Medical College. Prof. BARKER will at once enter on his duties, and students will have an opportunity to profit by his valuable clinical instruction at that institution.

Dr. CLARKSON T. COLLINS, who formerly practiced his profession in this city, has founded an institution in the village of Great Barrington, Mass., for the treatment of chronic diseases,—of the existence of which, invalids seeking health in the country, should be apprised. Dr. Collins was well known in this city as a thoroughly educated and excellent physician; and the salubrity of the climate of the Berkshire Hills is universally known. We commend both the Doctor and the air to those having need of either, only regretting that we have not before done justice to both.

THE AMERICAN MEDICAL MONTHLY.

SEPTEMBER, 1855.

PART I.—ESSAYS, MONOGRAPHS, AND CASES.

Surgical Cases at Bellevue Hospital. Service of Dr. L. E. SAYRE.
Reported by OSWALD WARNER, M.D., House Surgeon.

Removal of a Portion of the Right Radius for Necrosis.

ANDREW ROSS, of Ireland, laborer, single, aged 21, admitted to the Hospital Feb. 6th, 1855.

HISTORY.—His previous history evinces a predisposition to scrofulous disease, his father having died of phthisis, at the age of 55 years. His mother is still living, and in good health, aged 55.

At various times during his childhood and youth he has suffered from glandular swellings of a scrofulous nature. For one year previous to his admission he suffered more or less with cough, pain in the chest, purulent and occasional sanguineous expectoration. His general health, however, was but little disturbed.

About two years since he received a blow on the wrist, causing a simple fracture. No dressings were applied, and no attention given to it. In two weeks afterward an open sore formed on the palmar surface of the wrist, from which several

spiculæ of bone were discharged. During the year following several openings were formed, at different periods, on the dorsal surface, from which various other spiculæ were discharged. These openings remained at the time of admission to the Hospital.

When admitted the radius was much enlarged for about one-half its length, and on passing a probe into the openings above mentioned, dead bone was detected to about the same extent. The wrist was nearly ankylosed, and the fingers could not be closed ; thus rendering the hand nearly useless.

On Saturday, Feb. 17th, a consultation was called, and it was decided to cut down upon the bone, ascertain its true condition, and do what then might be deemed necessary.

Feb. 27th : The operation was performed by Dr. Sayre, cutting down upon the bone, trephining and removing a sequestrum of considerable size. This being done, the involucrum was found to be in a carious condition, and it was decided to remove it ; which was immediately done, leaving the upper extremity with the attachments of the supinator brevis and pronator radii teres muscles intact. The scaphoid bone of the carpus was firmly ankylosed to the radius, and was removed with it. Very little hæmorrhage followed, and only two small arteries were tied. The wound was dressed by filling it with lint, and applying strips of adhesive plaster and a roller. The arm was then laid on a splint and allowed quietly to rest. On the day following it presented an erysipelatous appearance, which, however, was held in check by cooling applications. On the second day the dressing was removed. Wound suppurating nicely. No hæmorrhage. Constitutional disturbance was considerable ; not of a high inflammatory character, but rather the opposite.

Good food, stimulants, tonics, and anodynes, were freely administered. Several small abscesses formed about the wrist, from one of which (situated at the carpal extremity of the ulna), after being opened, hæmorrhage took place several times, but was checked by cold pressure and an elevated position.

In two months the wound was entirely healed. By the long continued and free use of passive motion, he now has a very good hand. He can grasp a small stick, such as a pen or pen-

cil, with a considerable degree of firmness. He also has much more mobility of the wrist than before the operation. His hand and arm are strong enough for useful purposes in any light occupation. He has a considerable degree of rotation by means of the upper extremity of the radius and the firm cicatrix, where the lower part of the bone was removed. The portion remaining seems to be gradually growing longer. I think it is now about an inch longer than when the operation was performed. His general health is good, yet he still continues to have demonstrations of the scrofulous diathesis, in various chronic glandular enlargements.

Punctured Wound of Abdomen.

JOHN LYNCH, of Ireland, aged fourteen, single, enjoys robust health, but is quite small for his age, admitted July 8th, 1855.

HISTORY.—On the day of his admission, while running with a shoe knife in his pocket, he fell, the knife passing through the abdominal walls into the cavity of the peritoneum. The knife was pointed, and the wound caused but slight pain. Patient, after rising, pulled it out of the wound with his own hand, thinking it only penetrated the skin. A portion of omentum immediately protruded, and reduction was attempted by a bystander, but without success. He felt very weak and faint during the attempts to reduce. Two hours after this time he was brought to the hospital.

On examination, it was found that the knife had entered half an inch below the umbilicus, and a little to the right of the median line (making a wound half an inch in length), passed obliquely upwards, and to the left, immediately beneath the skin, one and a half inches, and then abruptly entered the abdomen. A portion of omentum two and a half inches long by one in breadth, protruded from the external wound. Moderate efforts at reduction, under the influence of chloroform, failing, the external wound was enlarged, and the mass returned with comparative ease. The external wound was closed by suture. Immediately over the internal opening a button folded in lint was placed, and retained firmly in its position by strips of adhesive plaster. Morphine in doses of $\frac{1}{4}$ th grain until three were taken procured sleep, bringing the pulse to sixty-five, and

the respiration to twelve in the minute. By occasional repetition of the above dose, the pulse and respiration were held about at this point until the third day, when no symptoms of peritonitis having been developed, its use was entirely relinquished, except simply to produce sleep at night; about $2\frac{1}{2}$ grains having been taken.

On the second day he asked for food. Rice was given in small quantities. It was however soon rejected, and with it was a quantity of cabbage which he had eaten at dinner the day previous, the latter being unchanged after remaining twenty-four hours in the stomach. After this the vomiting ceased.

3d day: No tympanites, nor tenderness of the abdomen; respiration abdominal, easy, and without pain; pulse soft, and natural in frequency and fullness; skin cool, soft, and pliable.

On the 4th day the dressings were removed. External wound not entirely healed by first intention, but doing very well.

The button which was placed over the internal opening answered its purpose well, entirely preventing any protrusion of the viscera till the wound healed; even during the vomiting, which occurred on the second day. His bowels, which had not been moved for two days previous to his admission, remained quiet for one week, when a simple injection was given, causing free evacuation without pain.

On the 12th day after the accident he was allowed to leave his bed; and on the 20th, was discharged entirely cured. I have frequently seen him since his discharge. The wall of the abdomen seems to be as perfect as before the occurrence of the accident. As a safeguard he still wears a bandage neatly applied around the abdomen.

Bellevue Hospital, Aug. 16th, 1855.

Case of Early Menstruation. By J. O. BRONSON, M.D.

To the few authentic recorded cases of extraordinary precocious physical development, must be added the following, which those present had the pleasure of seeing at Prof. Barker's clinic for diseases of women and children, on the 27th of July, and

again on the 14th of August. It is a case of early menstruation, the subject of which is named Phœbe Ann Baker, now four years and seven months old, having been born on the 19th of January, 1851, in Sing Sing, Westchester county, N. Y. At the age of ten months her menses appeared, accompanied by the usual signs and developments, and have continued with healthy regularity ever since.

The girl is large for her age, with light brown hair and complexion, and blue eyes. Her form is mature. Her mammæ are prominent, the size of an orange; pelvis wide, and her pubis is covered with hair. In fact, she is a woman in physical, and a child in her mental developments. She is quite unconscious of her condition, having no uncommon degree of modesty, and seems to have no sexual feelings. She is healthy and strong. The catamenial discharge is healthy in color, character, and quantity. The performance of the function is not accompanied with pain. Nothing concerning the parents, or otherwise, was elicited, tending to throw light upon the causes of this early establishment of the female function. This case cannot be classed with those of disease simulating menstruation, but is a *bona fide* case of infantile puberty.

There are some interesting cases of precocious puberty, and even of parturition, on record, of which I will mention some of the most remarkable.

A case was transmitted to the Medical Society of Thoulouse, by M. Gaugiran, of some interest. In June, 1840, he was called to see a young girl aged five years and three months, the subject of menstruation from three years, in whom the female developments were equal to the case above reported. M. Gaugiran was called to treat her for a suspension of the catamenial function. She was affected by the ordinary symptoms of chlorosis. Being subjected to treatment for that malady, the menses appeared again, and her health was completely restored.

Mr. Ranoe details a case in the Transactions of the Royal Society of Copenhagen (t. iv. p. 44), of a girl who "put on womanhood" at the age of three years.

In the German Ephemerides (dec. 3, an. 2, p. 262), a case of precocious menstruation, pregnancy, and parturition at the age of nine years, is published.

M. Schmith, in Sue's *Essais Historiques*, Paris, 1779 (t. ii. p. 344), gives an account of a girl who became the subject of menstruation at the age of two years, and at the age of eight years gave birth to a dead child, at the full period of gestation.

Sir Astley Cooper gives the history of a case of early menstruation, reported in the *Medico-chirurgical Transactions* (vol. iv. p. 490), which is interesting more on account of the minuteness of details, than the peculiarity of the case. The catamenia appeared at the age of three years.

M. Brierre de Boismont, in his work *De la Menstruation*, &c. (p. 32), gives some interesting instances, which, however, not being of earlier development than the above cases, I will not quote. He mentions cases, but does not detail them, referring to Haller, in his *Elementa Physiologica* (t. viii.), where menstruation appeared as early as six and even three months. I have not been able to obtain the work, and therefore can do no more than M. Brierre de Boismont.

In the *Hist. de l'Acad. Roy. des Sciences*, for 1761, p. 59, a most interesting case is reported, of a female child which bore at her birth all the external marks of puberty. The menses appeared at the age of four months, and had continued to the time of the record, which was four years.

This is the only instance to which I can refer where menstruation appeared earlier than in the subject of this notice; and among the recorded cases, but few are found to possess the regularity and health of the above case.

Case of Amniotic Dropsy, Terminating Fatally. Reported by
GEORGE AMERMAN, M.D., House Physician to Bellevue Hospital.

Jane Lewis, aged 20, married, born in Connecticut, was admitted into Bellevue Hospital on the 29th of June, 1855, in her first pregnancy, for the purpose of being confined. She was a woman of small size, lymphatic temperament, and weak constitution. She could not tell how near she was to her confinement, neither could she give the date of her last menstua-

tion. Her lower extremities were considerably swollen, but at the time of her admission she made no complaints, and no particular attention was directed to the case. About the middle of July, however, she asked for an extra allowance of diet, saying that she had a very poor appetite and felt very weak. On examination, the lower extremities were found very oedematous, the pulse small and weak, and the respiration much interfered with. The bowels were costive, and the urine scanty. The liver, heart, and kidneys, apparently healthy. No disease of the lungs. She was ordered extra diet, and four ounces of gin per day. No further notice was taken of the case, as the patient was up about the ward, and made no further complaints until the 26th of July, when an attack of syncope came on, as the patient suddenly assumed the horizontal posture. The abdomen was now enormously distended, hard, tense, and painful. She had occasional vomiting, but no hiccough or palpitations. Her skin appeared normal, her countenance placid, and her only anxiety was for her child, which she had not felt for the last four weeks. At this time she was ordered Hoffman's anodyne, which gave her almost immediate relief, and no further attention was given to the case until the 6th of August, when Dr. Barker saw her for the first time. When his attention was called to the case, the patient was sitting up in bed, and unable to assume the horizontal posture. The dyspnœa was exceedingly severe; the countenance expressive of the greatest anxiety and distress; the patient restless and suffering extreme agony in her vain efforts to respire freely. Dr. Barker made a very hurried and imperfect examination, but at once decided that the case was one of amniotic dropsy, and that the operation of rupturing the membranes and drawing off the waters, thereby relieving the distension of the abdomen, and the consequent pressure on the thoracic viscera, was the only means of relief. He proposed to perform the operation without a moment's delay, as immediate suffocation seemed impending. The patient was directed to sit on a chair placed near the window. In her endeavor to walk from the bed to the chair (a distance of only a few feet) she was seized with so great dyspnœa, and her distress, arising from the very imperfect arterialization of the blood was so great, that she became almost delirious, and per-

fectly uncontrollable. Thinking that possibly her distress might be partially nervous, and that the excitement produced by his presence, added to his having mentioned an operation, increased the difficulty, he (Dr. B.) left the ward for a few moments. However, he was soon recalled by the nurse, who said the patient had "fainted away." Answering the summons instantly, he found her partially seated on the floor, supported, and held as near as possible in the erect position, speechless, eyes upturned and staring from their sockets, lips and face livid, veins of the neck distended with dark blood, and patient gasping for breath, as she writhed in the agonies of death. In less than three minutes an abundant flow of sero-sanguineous frothy fluid issued from the mouth and nostrils, and immediately the patient expired.

Section Cadaveris, nine hours after death :—Head, not examined. Thorax, all the organs found healthy. The aorta unusually small, not being over an inch in diameter. Structure healthy. On laying open the abdomen, the uterus was found occupying its *entire cavity*, and pushing up the diaphragm. The intestines, large and small, were pushed far up to either side, filling the smallest possible space. All the organs were healthy. The uterus and its entire contents weighed $22\frac{1}{4}$ lbs. The foetus weighed $8\frac{1}{4}$ lbs. The uterus and placenta $4\frac{1}{4}$ lbs. The amniotic fluid $9\frac{3}{4}$ lbs., or very nearly *five quarts*. Slight dropsy of the cord. No evidences of inflammation in any of the parts.

Another Mode of Passing Catheters into the Trachea.

To the Editor of the American Medical Monthly :

DEAR SIR : It may not be superfluous to add to the numerous modifications of introducing the tube into the trachea, *one* which enables the surgeon to accomplish it quickly and easily, without much annoyance to the patient, a mode of introducing which admits of no doubt of the tube being in the larynx.

I have repeatedly tried to insert the tube in the larynx, modifying and shaping the tube according to the various manners

of the learned members of the Academy of Medicine, with and without the wire, but I had difficulty in introducing it into the larynx, as it often slipped over the epiglottis into the œsophagus. I have therefore resorted to another means of introducing the tube into the larynx, which mode, I think, will be found serviceable in a practical point of view. Advising the patient to go on breathing, I introduce the right index and middle finger, previously wet, together with the tube (commonly No. 7), convex in its middle part, and placed between the two fingers along the back of the hand, with its concavity towards the back of the hand, and projecting a little below the tips of the fingers, into the glottis, and lifting and bringing backwards towards the root of the tongue the epiglottis, I press it at its under surface towards the tongue, and pushing the tube with the left hand (previously held on the occiput to support the head,) into the larynx, I quickly withdraw the fingers and remove the wire (which is somewhat shorter than the tube), and push it further down in the trachea, in order to make the injection. I have succeeded in introducing the tube and probang in this way in all instances where I could reach the epiglottis, which can be felt perfectly by those who have long fingers. No gagging of any consequence, or other untoward symptom occurred. I have introduced, this morning, with facility, the tube into the trachea, in a patient of mine, in the presence of Drs. Green and Richards, and on other occasions in the presence of other medical men, who could introduce it easily in this way.

Yours respectfully,

ISIDOR GLÜCK, M.D.

12 *Waverley Place*, Aug. 22d, 1855.

PART II.—REVIEWS AND BIBLIOGRAPHY.

“Nullius addictus jurare in verba magistri.”

Lectures on Surgical Pathology, delivered at the Royal College of Surgeons of England. By JAMES PAGET, F.R.S., &c., &c. Philadelphia : Lindsay & Blackiston. 1854. pp. 699.

The topics treated of in this work are enumerated as hypertrophy, atrophy, repair, inflammation, mortification, specific diseases and tumors. Although the province of the surgeon is to deal with many of the results of these forms of disease, if not with the diseases themselves, still the discussion of these topics is of more general interest than a strictly Surgical subject. These lectures therefore claim far more attention from the profession at large than if they were upon subjects only surgical, and their title is on this account rather unfortunate. This we say at first, not as complaining, but to urge to a more general study of the book than we should feel authorized in speaking of a surgical work alone.

The plan of these lectures, which were delivered by the author when he was Professor of Anatomy and Surgery to the Royal College of Surgeons, namely, from the year 1847 to 1852, is as follows : Commencing with the nature, purpose, and condition of healthy nutrition, the formative process is considered, and the rules of growth are pointed out. From these the study of hypertrophy naturally results, as being excessive growth ; and also that of its opposite, atrophy, as being deficient growth. Repair next follows as a modification of growth, or unusual development of it ; and in its discussion the materials and process, as carried on in various tissues, and after different injuries, are both spoken of. Then the phenomena and products of inflammation are treated of, as well as the changes which it produces, its nature and causes. One lecture is devoted to specific diseases, while of the remaining fifteen lectures—there are thirty-five in all—the last is devoted to tubercle, the others being on various tumors and upon cancer and its general pathology. This we may give as a synopsis of the contents, while we proceed to discuss some of those topics, not so much at length as we could desire, but as our limits will permit. We will first add, that the one hundred and sixteen illustrations, are very fair wood-cuts, and are for the most part new.

Mr. Paget certainly was fortunate in having at his command the

Pathological Museum of the Royal College of Surgeons, by which to illustrate his lectures, and the Museum was fortunate in its illustrator. It was also an additional advantage to the pupils to be pointed to the specimens and preparations in St. Bartholomew's Hospital Museum, to supply any other wants. With such materials, the result of the persevering labors of distinguished men, not a little might be expected from a clear and practical thinker. The extent and variety of those materials, we can best illustrate by quotations. In the first lecture, in making the important distinction between development and growth, two brains of idiots show one of them a brain perfect in all its parts, but small ; the other of equal size, but the cerebral lobes covering the cerebellum very imperfectly : one heart has but a single cavity, another shows the septum of the ventricles incomplete, though from a child eleven years old : the skeleton of Mademoiselle Cracami is but twenty inches in height, that of the giant O'Byrne is eight feet. True, other museums may rival some of these, but any museum that can so well illustrate by rare specimens the same point in different ways, must be rich in many preparations. But it is not of these things that we wish especially to speak.

Development, growth, and assimilation, are the three steps in the formation and continuance of all tissues. The development takes place at first, and is the setting of the character of the tissue, in which increase of size is accomplished by growth, and its maintenance by assimilation. But almost with the first there begins a process of removal of parts or of elements, a receding in some particulars, though the whole may advance ; and use or wear of any kind, produces a deterioration in particulars, though perfection may be in general the result. These are by no means new doctrines, but they are well stated. Regarding the blood as having a life as much as any of the tissues, and pointing out some of these particulars in which they accord, our author is led into a discussion of symmetrical disease as a proof of it, and advances some odd doctrines. He says (p. 27) :

" But a far greater number of the morbid conditions of the blood consist in changes, from the discovery of which the acutest chemistry seems yet far distant, and for the illustration and discussion of which we cannot adopt the facts, though we may adopt the language and the analogies, of chemistry. It is in such diseases as these that we can best discern how nice is that refinement of mutual influence, how exact and constant that adaptation, between the blood and the tissues, on which health depends.

" I know no instance so well adapted to illustrate this, as the examples of symmetrical diseases. The uniform character of such dis-

eases is, that a certain morbid change of structure on one side of the body is repeated in the exactly corresponding part on the other side."

The first example adduced is a lion's pelvis, upon which there is a bony deposit similar to that which is sometimes seen in man as the result of rheumatism, and of which it is said "there is not one spot or line on one side which is not represented, as exactly as it would be in a mirror, on the other." The same fact was observed "in numerous pairs of the bones similarly diseased," we understand, in the same animal.

Other examples are the eruptions of eczema, lepra, and psoriasis, the deformities of chronic rheumatism, the paralyses from lead, the eruptions excited by iodide of potassium or copaiba, of which it is said that "any out-patient's room will furnish abundant instances of exact symmetry." So, too, it is stated that "any large museum will contain examples of equal symmetry in syphilitic eruptions of the skull; in rheumatic and syphilitic deposits on the tibia and other bones; in all the effects of chronic rheumatic arthritis, whether in the bones, the ligaments, or the cartilages; in the fatty and earthy deposits in the coats of the arteries."

"Now these facts," the author continues, but are they *facts*? Of the lion's pelvis we can say nothing, because a wood-cut does not enable one to speak of it. But, is it true that the eruptions of eczema, lepra, and psoriasis are usually in the same person exactly symmetrical? The modification is indeed made in a note, that though they may not be at first, yet, in the progress of the disease it will be found that just the same part has been gone over on the one as on the other side of the mesial line. But, bearing in mind this extension of the time, is it still true? Certainly our own experience satisfies us that it is not. One may find cases that are almost exactly symmetrical, but we apprehend that they would strike a majority of medical men as very unusual. And not the less unusual would be the appearance of *precisely* symmetrical ulcerations and nodes from syphilis or other cause, and we should go with great confidence to any large museum to prove that our position is correct. True, we find nodes on the same portion of the tibia, but to state that in the same individual they will occur at precisely the symmetrical spots, and be of precisely symmetrical forms, is what pathological museums or living patients themselves will show to be incorrect. As the arguments are based on *exact* symmetry, if this is not clearly proved then the whole falls. One may say, too, *per contra*, that there are other diseases which directly oppose this theory of symmetry, than which

none can be more striking than *Herpes Zoster*, which, limited as it is in its extent, would seem more likely than other eruptions to develop itself symmetrically, instead of presenting its usual entirely unsymmetrical characteristics. So, too, erysipelas, which has often much more than eczema, the appearance of being developed from some blood disease, should be symmetrical, which it notoriously is not. Many other illustrations could be adduced ; but these suffice to show our impressions of the theory. For these reasons, and for others, which for their elaboration, would require too much space, we decline to consent to the "refinement of the operations of the affinities," as illustrated in the symmetrical theory ; and this is not a little strengthened by the author's own "may be," in his syllogistic conclusion in which, while he sums up, he destroys his whole argument.

But, returning to healthy nutrition, our author adopts the quaint idea of Treviranus, that "each single part of the body, in respect of its nutrition, stands to the whole body in the relation of an excreted substance." That is, as he explains it, "any part of the body, by taking from the blood the peculiar substances which it needs for its own nutrition, does thereby act as an excretory organ, inasmuch as it removes from the blood that which, if retained, would be injurious to the nutrition of the rest of the body." One having a perception of the ludicrous would be tempted to follow out this idea, and admitting Treviranus' idea of each portion of each tissue, the blood itself being no exception, would find his whole body to be only an excretion or mass of excretions. From what he was secreted it would not be easy to say, but it might be to him a useful lesson in humility.

But to follow our author more seriously, he believes Treviranus did not comprehend the importance of the principle which he states "so briefly and clearly," and proceeds to apply it more fully. In illustration the growth of the hair is referred to, and construed into an example, because "in its constant growth it serves not only local purposes, but for the advantage of the whole body ; in that, as it grows, it removes from the blood the various constituents of its substance, which are thus excreted from the body. And this excretion office appears, in some instances, to be the only one by which the hair serves the purposes of the individual ; as for example in the fœtus." The same explanation is given of the existence of hair on water animals as the seal before their birth, and which is soon after replaced by another growth. The *lanugo* of the human infant is also supposed to be the result of the removal from the system of so much excreted matter. Regarding the hair as thus an excretion, and as in a rudi-

mental state on the surface of the human body, analogy leads him to believe that there is the same explanation to be offered for other permanently rudimental organs, as the mammary gland of man. "To say they are useless, is contrary to all we know of the absolute perfection and all-pervading purpose of Creation ; to say they exist merely for the sake of conformity with a general type of structure, seems unphilosophical, while the law of organic types is in larger instances not observed, except when its observance contributes to the advantage of the individual." It is therefore as excretions that the author looks upon these rudimental organs "serving a definite purpose in the economy by removing their appropriate materials from the blood, and leaving it fitter for the nutrition of other parts."

The law of compensation in pathology is dwelt upon as illustrating the same thing, that law by which, for example, one kidney, in the case of disease or absence of the other, attempts to fulfil the duties of both, and synchronously with that attempt frequently is enlarged. Mr. Paget not only looks upon the excretion of urea as a necessity to the economy of the individual and the preservation of his life, but also the excretion of those elements which go to make up the organ itself, as equally necessary to his well being, if not so immediately vital.

Now to all this we cannot subscribe. The complimentary relations of different organs, a discussion which naturally springs from this seems to have some elements of interest and to be worthy of more elaboration, but the excretory character of each organ as concerns the rest, certainly is not proven. There are some considerations which directly militate against this theory. Thus of the hair, there is no one ingredient found in it which may not be removed by other organs. Following Scherer and Van Laer in their analyses, we could find modes of disposing of the margarine, margaric acid and oleine (whether they pertain to the hair properly, or are only an incidental addition to it), the chlorides of sodium and potassium, the lactate of ammonia, the sulphate of lime and magnesia, and the phosphate of lime and silica. What we would say is, that there are other organs and tissues by which these are separated, either to form a portion of their own structure, or to be thrown out of the body, and therefore there cannot be shown to be any necessity for this pilous excretion to preserve the well-being of the economy, if these elements be injurious to it.

Still more striking is the argument concerning the glandular structure. Take for instance the rudimentary mammary gland of the

male. What histological element enters into it that is not found in other parts of the body? Certainly not yellow or white fibrous, connective, adipose, or epithelial tissue, for all abound elsewhere, and these form their totality. The only possible peculiarity that we can conceive of, is in the milk-secreting cells themselves, and here the chief, if not the only difference, is in their vital endowments. The cell structure is not peculiar, save in the power bestowed upon it of separating milk from the nutritious fluids furnished to it, instead of secreting, as other similar structures are empowered to do, it may be saliva or pancreatic juice, &c. We have no more inclination than our author to assert that these several structures, either the hair or the rudimental organs, are useless. Still we do not find it necessary to resort to this method of showing it. It has pleased God to create many things for beauty, so far as we can judge, of which the most striking instance is in the colors of the petals of flowers. Their whole function, so far as man can judge, could be performed equally well if there were more uniformity in all or in each, and still such uniformity would have deprived all, from the toddling child to the decrepid old man, of one of the most exquisite, as well as most innocent enjoyments of which his nature is capable. This we say is the most striking example. But it is nearly as much so that this is the purpose, in part, of the hair. We do not mean in the artificial modes of arranging it, which civilization seems to entail upon man, but in its natural condition. Suppose the horse had not his flowing mane, how much less of beauty would there be in him, as untrammelled by harness he snuffs the breeze or dashes across the plain? And yet in him this *secretion* could have been easily removed without this added ornament. The anatomist and physiologist may forget to note what is evident to the man. True, to the author's assertion of opinion, we oppose only another opinion, but to establish a theory, he must bring facts, not opinions.

Admitting, then, the correctness of our author's first condition, of healthy nutrition, viz: "a right state and composition of the blood or other nutritive material," but denying and protesting against the theoretical assertions and illustrations which are sought to support or to exemplify it, pass we to the second condition, which is, "a regular supply of appropriate blood in or near the part to be nourished."

This condition must necessarily be true, and we have no occasion to dwell upon it, save to say that it is enforced by illustrations simple and sufficient. All must agree with the author, in his protest against the use of the phrase, "action of vessels," so common and so

much worse than useless. "The real process of formation of tissues is altogether extra-vascular," and upon it the vessels exert no, or at the most a merely passive, influence.

The third condition is, "a certain influence of the nervous system." What this influence is, and through what portion of the nervous system it is exerted, Mr. Paget does not attempt to decide, but that there is some influence thus exerted cannot be denied. The illustrations are apposite, and although more definiteness would be desirable, we seem to be compelled to wait for increased knowledge.

The last essential for healthy nutrition is "a healthy state of the part nourished." Using the word assimilation to express the fact of the appropriation by the formative process of those materials necessary for the continuance of the tissue as a whole, it is evident that *healthy* nutrition continues only so long as assimilation is natural. Excessive assimilation constitutes hypertrophy, while if deficient, atrophy is the result, and a heterologous assimilation, whether excessive or deficient, produces marked histological changes, conditions which we term pathological. The same rule holds good with tissues which do not exist in the normal condition of a part. Cicatrices afford, of these, the most familiar example, replacing, as they do, tissues removed by disease or accident, or being the result of other disease (and chiefly inflammation), and which continue to be nourished by a precisely similar and healthy nutrition. Cicatrices cannot properly be ranked as morbid, in the sense of diseased, structures. They are not natural to the part, it is true, but they are unusual tissues, provided for unusual occasions, and still subject to the ordinary rules of healthy nutrition. It is proper to speak of them as possessing a "healthy state of the part," and they lack no essential requisite for the performance of this function. The illustrations for enforcing the doctrines of this "condition," are not, to our mind, always forcible or well chosen, tending, we fear, sometimes, rather to obscure than to elucidate. These obscurities come to their height when our author attempts to explain the connection of mind and matter, a mystery upon which the dark lanterns of philosophers have hitherto thrown only a foggy illumination, and which we believe we shall not comprehend till we have passed through "the dark valley."

It is entirely impracticable for us to dwell so minutely upon other portions of the book as we have upon these first two lectures, for thus far we have confined ourself to these. These, however, are fully illustrative of what we consider its excellences and its faults, though the latter are far more abundant in these than in the volume taken

as a whole. The excellences are an originality of observation, and diligence in collating facts, together with a ready appreciation of their bearing on each other and upon the whole. The faults are just what we should anticipate from the very excellences, viz: a hastiness in running into theory, and allowing speculation to go beyond the limits which can be noted, so that confusion results, while what seems a speculative materialistic theology occasionally throws its bale light upon us. These faults are the more to be regretted, that they so much injure what is excellent; and as they throw the student into a position of opposition, they tend to hinder the reception of the really important truths which the author enunciates. These are not theoretical objections, but such as we have found actually to require to be overcome when attempting to use the work as a text-book.

Lectures three and four are on the formative process, growth and hypertrophy, while those numbered five and six are of atrophy and degenerations.

It is an error into which our author allows himself to fall, in following the usual track, to speak of hypertrophy, that is of excessive or even unusual growth, as of the same character, whether it be physiological or pathological. There is a broad distinction to be made between the two. We have known an instance in which the integuments of the face were increased in superficial dimensions so as to hang in huge folds from it, a case apparently of pure hypertrophy of the skin, and strictly pathological. On the other hand, instances of increased dimensions of the heart are of very frequent occurrence. This is also usually termed hypertrophy, but it is *physiological* ordinarily, if not always, and should not receive the same name as a pathological change. The artisan's arm is developed, as to its muscles and other tissues, in accordance with those rules which call for a continued increase of a part to enable it to perform its function to the highest degree of which its limits allow. But this is no pathological state. So, too, the heart, if an obstruction exists to the flow of blood through the vessels, whether from contraction of their calibre (as from disease of the valves) or from sluggishness, the result of enlargement (aneurism) is found to meet physiologically the demand which is made for a greater propelling force at the centre of circulation. Its dimensions are increased, but it is by development, not by a morbid change; and if hypertrophy is the title assigned to the pathological increase, another should be used of the physiological. This distinction is by no means a hypercritical hair-splitting. Aside from the fact that science to be accurate must use terms accu-

rately, we have at hand an illustration that shows the obscurity produced by this very confusion of conditions. In the table lately published by the City Inspector of the semi-centennial mortality of the city of New York, we find in the list of deaths from disease of the circulatory system, the title "enlargement of the heart," and carrying out the line, the first record is in the year 1853, when fifty-eight deaths are recorded from this cause. Now is it not safe to say that excepting in cases of malformation, the individual has not yet lived who has died simply from increase in the size of his heart. Several pathological conditions demand physiological increase of this organ, and these pathological conditions continuing, may, and do kill, notwithstanding the effort, so to speak, of the heart to prevent it. It is a noteworthy fact that these lectures were delivered in London from the year 1847 to the year 1852, and in the table of the New York City Inspector, the first case of death ascribed to "enlargement of the heart," is in the year 1853. We do not assert that the one is the cause of the other, and still the coincidence is striking. At the same time, however, "disease of the heart," which from the year 1811, when one person is reported as dying from it, had increased steadily, though with an interregnum of nineteen years, till it reached in 1852, two hundred and seventy-six deaths, fell off in '53 thirty-eight deaths. We may, therefore, suppose that "enlargement" has before been reckoned as a disease, and was first separated in '53 in the physicians' reports.

But we are compelled, with an amount of self-denial which we fear our readers will not appreciate, to pass over several other topics under this head and its correlative, atrophy, though still hoping for another opportunity to recur to them; for we believe that important discriminations may be made in elucidation of them.

Lectures seven to twelve inclusive are of repair in the various tissues, and the various modes in which it is accomplished, and open a very wide and interesting field for discussion. Here again justice both to the author and reviewer, requires more than our present limits. Neither could we confine ourself to these without also entering upon the topics of the succeeding lectures, so far as to the twentieth, including as they do inflammation and inflammation products. Here again we believe that Mr. Paget has shown many very important doctrines, but has sometimes unfortunately and unnecessarily obscured them, sometimes by clinging to the old dogmas too tenaciously, sometimes by not fully perceiving the direction of his own observations. But for his advance, we heartily rejoice, as we believe every

thoughtful teacher of medical science must, and as we believe surgeons sooner or later will, availing themselves as some already are, of his practical suggestions.

The last fourteen or fifteen lectures, we do not at this moment remember precisely which, compose in the English edition a separate volume, and properly, for they treat of special, not general, pathology. We commend its discussions to all who have not seen or studied it. The portions treating of the various cancerous, canceroid and cartilaginous tumors, are to our mind of great value. Not that they should be followed without consideration, but there is abundant matter to suggest to a thinker long trains of thought, often in new channels.

And thus we leave the book, fortunate if we shall stir up any one who has not studied it to do so. Our notice is late, but we do not know that we regret it on the whole, and, giving our decided commendation to it, we feel that it is no hasty, sudden decision, but the results of careful study and observation of its excellences, as well as its defects. An early opinion is of more use perhaps to a publisher, a mature one to the profession. §

Elements of Human Anatomy, general description and practical. By T. G. RICHARDSON, M.D., Demonstrator of Anatomy in the Medical Department of the University at Louisville, &c. Philadelphia: Lippincott, Grambo & Co. 1854. pp. 734.

This book was received and acknowledged a long time ago, but it was borrowed by a friend, and only recently has been recaptured. Apologizing thus for a delay in noticing it, we say at once that we like it. One does not look for novelties in a work on Anatomy, and the most that can be expected of one intended for students, is that it should be a good text book. Trial alone can fully determine the qualifications of a hand-book for this purpose, and to that test we propose to put this volume.

The cuts are well selected and arranged, the descriptions for dissection are sufficiently minute, and are accurate so far as we have examined them, while students generally will be gratified to find some directions additional to those usually given for making injections and keeping subjects. Reference to economy in using and preserving material is also a wise addition.

Because we like the book we shall take the liberty to make two suggestions to the author. The first is to give the title "histology" to Part I., which is now termed "General Anatomy." A description of the tissues takes up almost the whole of it, and histology should be admitted as a part of general anatomy, as well as, and no more, than osteology or myology.

The second suggestion is to replace the English and *Englishified* terms by the Latin. It is impossible to reduce all to English, and the attempt only makes more confusion. To call the *os innominatum* the "innominate bone," is not to use English; that would be the *unnamed bone*; while to translate the names of its three different parts, is to the author so evidently unwise that he has not attempted it. It is the same with many other terms, and the better way is to give the Latin technical, and if desirable accompany it with the English in brackets. Every science must have technical expressions, and every medical student ought to know enough of Latin not to be puzzled by any terms in use in anatomy. By condescending to ignorance, we only prevent its being superseded by knowledge. In the many succeeding editions of the volume which will we trust be demanded by the profession, we shall hope to see these things corrected.

E. H. P.

PART III.—PROCEEDINGS OF SOCIETIES.

Extracts from the Proceedings of the Tenth Annual Meeting of the Association of Medical Superintendents of American Institutions for the Insane.

Dr. Luther V. Bell on "Spiritual Phenomena." Discussion.

Dr. Bell read a paper on what are called the "Spiritual Phenomena," supplementary to one which he presented at the last meeting of the Association, at Washington, of which no report had ever been made, by request of several members. They considered that the whole subject was then too immature, and so much connected in the public mind with the ridiculous, as to make it inexpedient that it should be more than generally announced as among the topics discussed by the Association.

As it is understood that these papers will not be published—their

basis being much in certain domestic experiences—it is thought best to present a brief summary of the leading facts and conclusions.

Dr. Bell commenced by expressing his surprise last year in finding that, at so large a meeting of persons whose lives were spent in investigating the reciprocal influences of mind and body, scarcely a single member had given a moment's attention to a topic directly in their path, which, whether regarded as merely an epidemic mental delusion or as a new psychological science, was producing such momentous effects upon the world. It was now said to number over two millions of believers, had an extended literature, a talented periodical press in many forms, and had certainly taken fast hold on many minds of soberness and power. He was well aware how easily it was turned to ridicule, and that there were many who would be ready to ask, when they saw hospital directors seriously discussing the spiritual phenomena, *Quis custodiet ipsos custodes?*

But if there was any class of men who had duties in this direction, it was those of our specialty. Our reports contain the record of many cases of insanity said to be produced by it. It was important, whether true or false, or mixed, that its precise depth, length, and nature should be studied out. As is well known, mystery always loses its terrific character when boldly met and opened to the light of noonday.

Dr. Bell remarked, that, on his return home from our meeting at Washington, he had a peculiar wish to verify his previous observations on what are technically known as the physical manifestations of this new science. He could not pretend that he could doubt his repeated personal observations, addressed to his sight, hearing, and touch, and separated, as he believed, from any possibility of error or collusive fraud. Yet the offer, by Professor Henry, of a large sum to any person who would make one of *his* tables move *in* the Smithsonian Institute, and the obvious incredulity of many of the "brethren," had induced the desire again to see some full and unequivocal experiment in *table-moving*.

An opportunity was not long wanting. On the occasion of the visit of a well-known gentleman, long connected with the insane, and who never had seen any of these phenomena, to the asylum, Dr. Bell invited him to go to a family where a medium of considerable power was visiting. The family was one of the most respectable of the vicinage, the head of it being a gentleman entrusted with millions of dollars of other people's money, as the financial manager of a large banking institution. He and his wife had for some years been per-

fectly convinced of the spiritual character of these manifestations. The medium was a young lady of eighteen or twenty, of very slight figure, weighing eighty or ninety pounds, and had discovered herself to be a *medium*, while on a visit to these distant relatives. A family, from character and position, more entirely beyond the suspicion of even winking at anything like fraud or irregularity does not exist in the world. They were so fortunate as to find the medium at home, and the circle was made of the five persons mentioned. The ordinary manifestations of raps, beating of musical tunes, and responses to mental and spoken questions, were very completely presented, as well as the movements of the table under the mere contact of fingers' ends. Finding that things appeared very favorable to a full exhibition of what he wished to see, as evinced by the very facile movements of the table under contact, Dr. Bell proposed trying the grand *experimentum crucis* of the physical manifestations—the movement of the table without any human contact, direct or indirect. He was permitted to arrange things to suit himself, and began by opening the table more widely, and inserting two moveable table-leaves, which increased the length from about six to perhaps nine or ten feet. This he felt also gave him an opportunity to disturb and see all wires and mechanism concealed, or, at least, to answer positively as to their non-existence. The table was a solid structure of black walnut, with six carved legs, the whole of such a weight that, when the castors were all in the right line for motion, he could just start it by the full grasp of the thumb and fingers of both hands.

The persons stood on the *sides* of the table, three and two, and back from its edge about eighteen inches. As Dr. Bell is some six feet two inches in height, he averred that he had no difficulty in seeing *between* the table and the persons of all present. The hands were raised over it at about the same height of a foot and a half.

At a request, the table commenced its motion, with moderate speed, occasionally halting and then gliding on a foot or two at once. It seemed as if its motion would have been continuous, if the hands above it had followed along *pari passu*.

On reaching the folding doors, dividing off the two parlors, and which were open, it rose over an iron rod on which the door-tracks traversed, and which projected half or three-quarters of an inch above the level of the carpet. It then entered the other parlor, and went its whole length until it came near the pier-glass at its end—a centre-table having been pushed aside by one of the party to allow its course.

At request, for they, during this time, spoke as if to actual beings,

the motion was reversed, and it returned until it again reached the iron rod. Here it stuck. The table hove, creaked and struggled, but all in vain; it could not surmount the obstacle. The medium was then "impressed by the spirits" to write, and seizing a pencil, hastily wrote, that if the fore legs were lifted over the bar, they (*i. e.* the spirits) thought they could push the others over. This was done, and the motion kept on. Once or twice Dr. Bell requested all to withdraw a little from the table, "to see how far the influence would extend." It was found that whenever a much greater distance, say two feet, was reached, the movement ceased, and a delay of three or four minutes occurred before it recommenced, giving the idea that, if broken off, a certain reaccumulation of force was needful to put it in motion again. The table reached the upper end of the parlor from which it started, but was left at some four feet from the median line of the room. Dr. Bell expressed the thanks of the company for the very complete exhibition with which they had been favored, but remarked that the obligation would be enhanced if the "spirits" would move the table about four feet at right angles, so that the chairs would come right for their late occupants. This was immediately done, and the performance was deemed so perfectly full and satisfactory that nothing more was asked at this session.

Dr. Bell was understood to say that this made some five or six times in which he had seen the table move without human contact, and all under circumstances apparently as free from suspicion as this just related. He also stated that the Rev. Mr. P., a clergyman of extraordinarily sagacious perceptions and mechanical skill, took this same medium to his own house, without previous thought, where she never before had been, and where his own table, in the presence of his own family alone, went through the fullest locomotion without human touch. Dr. Bell mentioned, that, in his last experiment—that just narrated—the entire space moved through was over fifty feet.

Dr. Bell then passed to the topic of responses to mental and verbal questions, and gave several narratives of long conversations with what purported to be the spirits of persons dead for twenty-five to forty years, in which every question he could devise relating to their domestic history, and to events in it known only to them and him, had been truly answered. Some of the questions put mentally—*i. e.*, without speaking or writing—had half a dozen correct replies, forbidding, of course, completely, on any doctrine of chances, the contingency of accident or coincidence, as such *mental* questions, *per se*, negative the explanation of previous knowledge on the part of the medium.

A brief abstract of one of these will give a general idea of their character. Dr. Bell had frequently remarked to his "spiritualist" friends, that if any medium could re-produce the essential particulars of a final interview which had occurred between himself and a deceased brother, in 1826, he should be compelled to admit that it came from his spirit ; because he was sure that he (Dr. Bell) never had communicated it to any living being. Hence, as it never had been known to but two persons, and was of so peculiar, well-marked a character as not to be capable of being confounded by generalities, he should hardly be able otherwise to explain it. A few weeks afterward, what purported to be the spirit of that brother narrated the essential particulars of the interview, the place where, down to the well-recollected fact *that he was adjusting the stirrups of his horse, preparatory to a distant journey, when it was held !*

Pretty early, however, in his investigations, Dr. Bell began to find that, however correct his spiritual conferees were in most of their responses, the moment a question was put involving a response, the truth of which was unknown to him, uniform failure occurred. Sometimes, where he believed, at the time, that his questions were truly answered, subsequent information had shown him that he had been mistaken. He had answers which he believed to be true, when the facts were decidedly otherwise.

Pursuing this train of inquiry, he found the "spirits" while averring that they could see him distinctly, "face to face," never could read the signature to letters taken from an old file and unfolded, *without his having seen the writing*. Yet as soon as he had cast his eye upon the signature, without allowing any one else to see it, it was promptly and correctly reproduced by the alphabetical rappings. And again, when he had made a previous arrangement with his family that they should do certain things every quarter of an hour at home—he, of course, not knowing what—while he was to ask the "spirit" what was done at the instant, uniform failure occurred. He proved, too, that the theory of the "spiritualists" to meet such difficulties—viz : that evil or trifling "spirits" interfered at *their* end of the telegraph—was not tenable. For the responses, just before and after these gross failures, had been eminently and wonderfully accurate, and the "spirits" not only declared that they saw with perfect clearness what was going on at his house, but denied that there had been any interruption or interference.

Dr. Bell also gave examples where test questions, involving replies *unknown* to the interrogator, had been designedly intermixed with

those which were known. The result uniformly was, that the known responses, however curious and far remote, were correctly reproduced—the unknown were a set of perfectly wild and blundering errors, the response often being obviously formed out of the phraseology of the question, as a *stuck* school-boy guesses out a reply !

The result of the inquiries of Dr. Bell and his friends—for several gentlemen of eminently fitting talents pursued the investigation with him—was briefly this : *that what the questioner knows, the spirit knows ; what the questioner does not know, the spirits are entirely ignorant of.* In other words, that there are really no superhuman agencies in the matter at all—no connection with another state of existence ; but that it bears certain strong analogies to some of the experiences of *clairvoyance*, in that mysterious science of animal magnetism, as it has been protruding and receding for the last hundred years. Dr. Bell thought there was some reason to believe that the matter reproduced may come not only from the questioner, but if in the mind of any one at the circle, that it might be evolved. He made some observations upon the evidences of spirit existence, drawn from the character of the matter communicated by the mediums in a state of *impression*, when, as is believed, spirits express themselves through the human agent. Of course, the quality of such composition is more or less a question of taste. Much of it is elevated, indicating high intellectual and moral capacities in the mind to which it owes its origin. Much more is absurd, puerile, and disgusting, infinitely below the grade of the human productions of the same persons from whom it professedly comes. Yet the spiritual revelation has given us nothing of such extraordinary value or novelty as to stamp it, in the judgment of unprejudiced minds, as of super-mundane production. Dr. Bell alluded to a treatise which had been put into his hands by an earnest spiritualist, purporting to be the work of Thomas Paine, the author of the “ Age of Reason,” &c., which was thought would carry conviction to anybody, as it purported to be a full explanation of the formation and changes of this earth, by one who, from his *situs*, must know all about it. The truth was, that the work was the production of some mind, celestial or mundane, ignorant of the very first rudiments of chemical philosophy, in which the most ridiculous blunders were made, on every page, in matters which are as demonstrable as mathematics, and where, of course, the answer cannot be made that the revelation was too high for common readers. Nor does Dr. Bell believe, from his observations, that the waters from this fountain ever reach a higher level than their source. The most elevated

specimens of the spiritual literature would, no doubt, be found in the communications from Swedenborg and Lord Bacon, in Judge Edmonds' and Dr. Dexter's first and second volumes. Yet, whoever reads the very elegant and powerful preliminary treatises of these gentlemen, which Dr. Bell thought would compare favorably with any writings of the kind ever published, would not be able to feel that Swedenborg and Lord Bacon, after their nearly one, and more than two centuries' residence amidst the culture and refined senses of the superior spheres, had more than equalled their unpretending amanuenses yet in "the vale of tears."

Dr. Bell paid a glowing tribute to the character of Judge Edmonds. He did not believe that modern history could furnish an example of a more noble, chivalrous, self-sacrificing devotion to what he believes to be the altar of truth, than that gentleman had evinced. He had not hesitated to sacrifice the loftiest political and professional prospects, as well as some portion of a well-deserved social influence, to his convictions. The days of the martyr were not over, although the days of the faggot, the cross, and the stake might be. When Judge Edmonds promptly and decidedly told a political committee, which waited upon him to announce that he must abandon his high office or suppress his book, that he would be bought at no such price, he stood as noble a one of the army of martyrs as any church has canonized !

Dr. Bell concluded by the expression of his full conviction that, while the faith in spirits must be given up, as connected with these facts, it was a topic, whether regarded as a physical novelty or even as a delusion, cutting deeply into the very religious nature of our people, which was worth our fullest examination. *There were great, novel, interesting facts here.* They had not been treated fairly and respectfully as they should have been. The effect was, that the community, knowing that here were *facts*, if human senses could be trusted at all, went away from those who should have thrown light upon the mysteries, but who would not or could not, to those who gave some explanation, even if it was one which uprooted all previous forms of religious faith. He hoped that the members of this Association, who were as much required to examine this topic as any order of men, except, perhaps, the clergy, would not be afraid of looking it in the face, from any apprehension of ridicule, or of degrading their dignity.

Dr. Gray inquired if there were any perceptible effects produced upon the feelings or health of the mediums by the exercise of this power.

Dr. Bell replied that his inquiries of them led him to suppose that

there were no palpable influences from this cause. One of the most intelligent and successful of these, in public practice—Mrs. Hayden, now in England—assured him that she was conscious of no ill effects or feelings, beyond the tedium of prolonged, monotonous sessions with her crowds of visitors, whose wonderful recognitions of deceased aunts, parents, and friends, although very surprising to them, were “thrice-told tales” to her.

Dr. Cutter wished to know if *Dr. Bell* supposed that the medium was conscious of what was passing in the mind of the questioner.

Dr. Bell thought such was not the case. The mediums all concur (and many of those in private life, at least, are of the highest worth—and, indeed, he believed many who gratified those interested by paid sessions to be no less worthy) in declaring that they have no consciousness of any participation in what is going on before them. Nor could he see, in the temperaments or other indications of the mediums, anything in common. They ran through a wide expansion of intelligence, from Judge Edmonds down to the most moderate intellectual development.

Dr. Cutter inquired how *Dr. Bell* supposed the raps to be made.

The Doctor admitted his entire inability to suggest how, any more than why the magnetic needle should insist upon turning towards the North, instead of S. S. E.

Dr. Bell remarked that there were a great number of curious facts connected with the various branches into which these phenomena had run off, into the consideration of which he had not time to enter. He considered them all as of less intense interest than the great question of the veritable existence of the “spirits.” “The trance speaking, the impressions of a visual panoramic order, the composition of all sorts of prose and poetry, the curious ‘spirit-drawings,’ and still other manifestations. Of some of them it is very difficult to make an explanation ; others may hereafter be found in the class of hysteric-nervous excitements, in which the individual, without any intention to deceive, is so wrapt up in an eternal flow of fancies as to lose consciousness of external things ; yet the intellectual processes go on.”

“Still other phenomena may, perhaps, be proved to be connected with the duality of the brain. It is undoubted that that organ is like the ear and eye, each of which is one of two symmetrical duplicates. When both act concurrently, but one class of effects is produced. When the ear or eye becomes dislocated from its fellow, double vision and disturbed audition result. One eye may be habitually passive,

as seems to be one perfect optic of the cross-eyed, and the attention is not called to the images which it presents, although these images may be all distinctly pictured on the retina, and may, by some association, or diseased action, be subsequently reproduced. The analogy of the brain to these facts is shown in the phenomena of dreaming, in which we do, and say, and think things which are utterly foreign to our habitual feelings and views, as much as one mind could vary from another. Or, again, it is illustrated in not infrequent examples of periodical mania, where, for a period of weeks, or months, or years, the patient lives in a certain state of moral, intellectual and affective existence, perfectly unlike the other remnant of his life. Were a new guide or governor known to enter the sensorium and assume the reins, a more completely distinct set of results could not be expected.

"The phenomena of impressions made upon an organ, and afterwards reproduced in disease, are common in the books."

"Dr. Bell admitted that many of the responses made by the purporting 'spirits' of your friends are so odd and unnatural, as compared with your own thoughts or manner of speech, as to make it difficult to believe that they ever came from your own habitual brain—that is, that part of your brain which you recognize as responsible to your own individuality."

He related an incident illustrative of his meaning. He was once attending a session, or circle, where his position was at the bottom of a long table, at the head of which the "medium" sat, and on each side of her were some other persons. All had paper and pencils in hand, to minute down the responses, &c. Owing to some "want of harmony" or other cause, the "spirits" failed in correct replies, and a good deal of confusion and repetition occurred. Often their reply, through the alphabet, was, "We don't know," "We can't tell," &c. Dr. Bell was amusing himself, under these delays, in drawing with his pencil a grotesque figure of an imaginary animal—a sort of griffin, with horns, tusks, &c., &c. After one of the replies of the "spirits" that they "didn't know," the Doctor rather pettishly lifted his pencil from the paper and said, "Well, do you know what this is?" The response was at once rapped out, "It is hard naming that beast!" As he was in a position where no eye could overlook him, and where no person beside himself could know what was drawn, he was at a loss to know out of whose brain, except his own, the quick repartee could originate. He certainly thought it strange.

The Doctor also mentioned other cases where the idea in the ques-

tioner's mind was reproduced, but in different phraseology from that he held. A "spirit," for example, was asked where she had been buried. The true answer was, *St. Augustine*. The letter *S* was first rapped ; he waited at *A*, having no idea that the contraction would be used, but *it was*, the rap being made at *T*.

Dr. Nichols inquired whether *Dr. Bell* had any further experiences and observations in the curious *inverted, reversed* handwriting, of which he had given an account last year.

Dr. Bell replied that he understood that that phenomenon of handwriting, where the pencil began at the *last* part of the *last* letter of the *last* word of the *last* sentence, and ran back rapidly to the beginning, being also *upside down* to the writer, was not uncommon, although he had not again met with it. In one instance in his experience lately, the medium wrote in a reversed manner, so that the writing could be read in a mirror, or by being held up to the light, back to the reader—obviously a very easy thing as compared with that just described.

Dr. Bell had seen many of the "spirit drawings," which seemed like incongruous, grotesque specimens of Chinese art—flowers, fruit, and leaves being aggregated against all the precedents of nature, or laws of botanical philosophy. They were only remarkable from being the production of persons unskilled in the use of the pencil, as was declared to be the case. *Dr. Bell* concluded by remarking that he regarded the question, whether spirits of the dead had anything to do with these phenomena, to be so much more important, in a practical point of view, than any of the other minor facts connected with them, that he had pretermitted much of his attention to these curious incidents, in order to direct his investigations more to the other point, the result of which he had endeavored to give.

Dr. Butler continued the course of remarks elicited by this Paper by saying, that when such statements were made by a man of as philosophical a mind as that of *Dr. Bell*, he thought them entitled to far more consideration and respect than he had been accustomed to give them. He hoped the Association might have the opportunity of witnessing some of the manifestations.

Dr. Workman was glad that such minds as that of *Dr. Bell* were investigating a subject that had been coupled with so much humbug ; but was, after all, opposed to taking much trouble with the manifestations, since so little was known in regard to them, and as they had revealed nothing new to us.

Dr. Worthington remarked that he had so strong faith in the fixed

and immutable laws of gravity, that he would sooner disbelieve the evidence of his own senses than believe that tables were moved without contact.

Dr. Buttolph thought it was incumbent on the members of the Association to endeavor to ascertain what is true and what is false in reference to the so-called "spiritual phenomena." If the subject can be divested of its terror, it will be deprived of much of its power for evil. If the idea of *spiritual* communications can be done away with, the whole thing will be relieved of mystery, and consequent tendency to mischief. He thought that, in view of the facts stated, they were not prepared to doubt or deny entirely. Hence, he considered the subject worthy of investigation, and especially by those engaged, as are members of this body, in the observation of interesting but intricate mental phenomenon. It was not impossible that a kind of atmosphere of nervous influence may surround an individual engaged as a "medium," so as to form a communication between him and another person, similar to that supposed to surround a serpent in the act of charming. He had witnessed none of the phenomena described, and had no settled opinion on the subject. He was glad *Dr. Bell* was satisfied that there was no *spiritual* communication about it.

Dr. Tyler thought that this Association and the world were under obligation to *Dr. Bell* for the pains he had taken to investigate this subject, and that they must be gratified at the conclusions to which he had arrived.

Dr. Walker remarked that he had examined the subject since the last meeting, and was convinced the raps were produced without machinery. He was inclined to think that the "spiritual phenomena" were only another phase of mesmerism. He thought it worthy of investigation, and that its tendency to evil would cease only when the law or principle of the phenomena was recognized.

Dr. Brown remarked that, as *Dr. Bell*, in his Paper of last year, as well as in that just read, had expressed a hope that members of this Association—as composed of individuals to whom the community have a right to look for a fair investigation of this subject—would join in its examination, *Dr. Bell's* declaration, that he had no belief in the "spiritual" hypothesis, as applied to this broad-spread epidemic, certainly entitled his proposition to the respectful consideration of the Association, and appeared to bring the subject within the proper range of its inquiry.

For these reasons, and as the "mediums" whom *Dr. Bell* had been accustomed to observe resided in that vicinity, he would desire—with

Dr. Bell's consent, and, if opportunity permitted, before their final adjournment—that a committee of the Association be appointed to join Dr. Bell in attendance at a “circle”; and he would hope that this committee might consist of gentlemen whose seniority in the Association, and whose present incredulity in the whole matter, would afford entire security against a hasty or partial judgment.

Dr. Jarvis had never witnessed any of the manifestations. The fact of the occurrence of certain of them as genuine psycho-physical phenomena, was here attested by very good authority, and he hoped the same authority would be able to afford an explanation of them. He did not know enough about the subject to judge whether it was true or false, but held himself in abeyance, prepared to believe, more or less, according to the bearing of facts presented hereafter.

Dr. Fisher was grateful to Dr. Bell for the paper he had presented, and thought he had made considerable progress towards a satisfactory conclusion—to wit, that spirits have no connexion with these phenomena. He believed this conclusion would have a salutary influence in correcting false impressions in regard to their character. He hoped the law of these phenomena would be developed, and brought down to the comprehension of all. He would as soon disbelieve his own presence as to disbelieve statements made by Dr. Bell.

The President (Dr. Ray) at the next day's session took an opportunity, not offered before, to define his position with regard to the subject of Dr. Bell's paper. He said: “I am obliged to repeat what I said last year, that I have never witnessed any of these phenomena—not from unwillingness, but solely from lack of opportunity. The opinion which you or I, or any individual, may entertain on the subject, is a matter of little importance in the present stage of the inquiry. The true and most important question now is, by what rules are we to be guided in the prosecution of truth, and what manner of men are to be employed in its investigation? You may say that the men engaged in these investigations are visionary men, insane, or on the verge of insanity. Others have said, and do say it. But the spirit which prompts such a statement is not calculated to extend the boundaries of our knowledge, nor to satisfy the world. By what right do you say it? Is there anything in the rules of inquiry observed by scientific men that warrants us to take that ground? I admit that we are not bound to investigate everything which solicits our attention. Something more is required, and that something more, I believe, is presented here. I believe a *prima facie* case is made out; and now it becomes those who are still unsatisfied to ex-

plain it, or hold their peace. The time is gone by when it could be left solely to ridicule. It appears to me that the objection, that we are not to receive even these facts, as facts, for the reason that they are at variance with the well recognized laws of matter, is not a sufficient answer. That is what logicians call a begging of the question. The very thing to be proved is, that the laws of matter, as hitherto understood, are the only laws. The people claim to have discovered other laws of matter—a different class of phenomena from those hitherto known. The only question now is, as to the authenticity of the facts. Now, as the human mind is constituted—as the laws of evidence are generally understood among scientific men—I claim that the case is made out, so far as the evidence is concerned. We cannot reject it without unsettling the whole foundation of human testimony : I know not where we are to stop. If a man should say in a court of justice, that he saw an individual strike another, what should we say of the counsel who should allege that the witness was laboring under an optical delusion and was self-deceived? The testimony might be objected to on the score of want of veracity, or of mistake, but not on the ground of optical delusion.

“Now, I do not see how the case is altered, whether the fact testified to be an assault of one man upon another, or the moving of an object before your eyes. It all depends upon the vision; and the testimony can only be invalidated by *proving* that the person is laboring under an optical delusion. It is to be *proved*.

“I do not think we gain anything by falling back upon the theory of imposture. I dare say there have been impostures in this matter. But that argument proves too much, if it proves anything : it would be effectual against any other department of science. We might say that the whole of our own science is imposture, because some have pretended to cure by charms, and have sometimes apparently succeeded. I feel under great obligations to Dr. Bell for his paper. I am under obligations to any man who fearlessly prosecutes a class of inquiries which other men, from one motive or another, are careful to avoid.”

NEW YORK STATE MEDICAL SOCIETY.

On Injury of the Shoulder. By W. S. NORTON, M.D.

There are few medical men, perhaps, who have followed the duties of their profession assiduously for a term of some twenty or thirty years, who have failed to meet, in the course of their practice, with cases that present features of peculiar interest—not only as matters of speculative curiosity—but as subjects of much practical importance to the profession generally, and, which, from the isolated position of the observer, or listlessness in procuring their publication, have never cast their light beyond their immediate pale of individual observation.

That instances of the like are passing before our eyes—not unfrequently, will be admitted by all—and it is from this omission to make them public, that much that is valuable and interesting is lost to the medical world.

It is not that I view the case that I am about to relate as unique, for others, doubtless, may have met with similar ones; but to me it has seemed of interest, as regards its rationale, and it is under this phase that I desire to lay it before the Society.

In the month of July, 1854, a middle aged man, a son of the Emerald Isle, with his better half, presented himself before me at my office, in the village of Fort Edward, with one arm suspended in a sling, and solicited counsel.

He stated that some ten months previous, while in the employ of Gen. Orville Clark, of Sandy Hill, he was thrown from a young horse he was riding, and falling upon his shoulder, it was dislocated, and he otherwise considerably hurt; that Dr. Erskine Clark was immediately called, reduced the bone, and placing it in a sling, pronounced all right.

After carrying it in such position a sufficient length of time, as directed by his medical and surgical adviser, it was taken out, and he advised to begin to use it. He soon found, however, that he had no power over the limb; and although he suffered no particular pain in attempts at motion, yet it hung by his side completely paralyzed.

On exposing the shoulder and examining it carefully, I could discover nothing out of place, save there appeared a slight depression under the acromion (it probably had been fractured), and falling of the shoulder; but this depression of shoulder might have been more imaginary than real.

With one hand upon the injured part, and the other on the wrist, I carefully brought his hand up to his face, and feeling no impediment to free motion, I carried it freely over his head, and moved it about in various directions without apparent inconvenience to the patient.

I then directed my attention more particularly to the hand. It appeared withered and almost motionless—not unlike one suffering from hemiplegia—but without contraction of fingers as we sometimes meet with in old cases.

Failing to find sufficient derangement of the joint to account for his disability, I replaced it in the sling with directions to have it so adjusted as to keep the shoulder raised, and be sure and take it out frequently during the day, and go through the manipulations I had practiced with it—a strong exertion of the will accompanying the action of the muscles—and at the end of a week or ten days to call again and let me see it.

At the end of about two weeks he again presented himself smiling, and with his wife as before, who had grown voluble, with characteristic remunerative thanks and invocations.

To be brief, he had practiced upon the advice I had given him, and had recovered, to my great surprise and gratification, considerable motion in the member, and at this time is able to use his arm and hand, and do fair manual labor.

Now, the question is, what this disability to motion depended upon. To me there appear but two points. 1st. Injury or compression of the brachial plexus or its nerves. 2d. Influence of the imagination over volition.

This latter idea may seem altogether speculative and absurd to many ; but the observant physician, I think, cannot have failed to witness some of its manifestations, and it is with the object of eliciting the views of members, that I place this case before the Society.

NEW YORK PATHOLOGICAL SOCIETY.

Dr. A. Clark presented a specimen of Softening of the Spinal Cord—Sudden Paraplegia, Gradual Recovery—Second Attack, Sudden and Permanent—Cord Softened—Multiple Abscesses of the Liver.

The specimen was obtained from a gentleman forty-five years of age, a bachelor and merchant, who enjoyed usual health till June, 1854. He has suffered sometimes from dyspepsia ; has once in his life, under peculiar circumstances, for a short time been addicted to the solitary vice. Once had a small sore that he thought might be specific (it probably was not), and three years ago had two or three ulcers on his legs, and a swelling of the top of the foot, which made him a little lame for a short time. Beside this his health has been good.

In June of last year, while at Schooley's Mountain, without any known cause, he was suddenly stricken with paralysis of the lower extremities, at first nearly complete, but in a few hours he recovered some use of his legs. In the course of a month he was able to walk clumsily. From that time he slowly improved, so that by the Autumn he could walk the streets without much fear of falling, though in stepping down from the sidewalks into the streets he found some care necessary. During all this time he suffered severely from neuralgic pains in the legs. In the course of the Winter (January) he went to Europe, and thinks that during the voyage, while there, and on the passage home, he improved more rapidly than before, so that on the 3d of May, one day before landing, he hardly felt himself an invalid. He walked firmly and had some athletic amusements with his fellow-passengers, such as he would not have dared to have attempted before the voyage. In some of these exercises he felt a sudden pain shoot through his chest on the line of the fourth and fifth ribs. This, however, was not very troublesome, and he went to bed with no more apprehension than usual. During the night he woke once or twice and felt his legs "much as if they were *asleep*." He thought little of this, however, but when he attempted to rise, early in the morning, he found his legs powerless. Attempting to stand, he fell heavily on the floor, and could not rise. He obtained assistance by raising his body by his hands and arms on to a trunk, so that he could reach the bell-pull. From that time forward he had no voluntary power in the legs ; they felt numb and dead, yet some sensation existed in them, and they were very prompt to obey the reflex influences. In the first attack the sensation was not wholly abolished.

On the 7th of May his condition was as follows : Sitting in an easy chair with his legs extended on another chair, without any power to move them ; at times they started involuntarily ; hands and arms entirely free and as strong as usual. A sense of painful constriction in the chest on the line of the fourth and fifth ribs centring in the sternum ; sensation all below this line, on the chest and abdomen, imperfect (ascertained by pinching the skin), bowels constipated, urine retained for a time, was now dribbling away without pain ; mind perfectly clear, appetite good, pulse natural, tongue clean, and no unpleasant sensation except in the chest, no tenderness on pressing the spine.

TREATMENT.—Consisted of derivatives to the spine between the shoulders, moderate diet, laxatives, the catheter, and a general tonic plan, including the use of strychnine. Patient under care of Drs. Parker and Watts.

In less than ten days excoriations occurred on the paralyzed parts most subjected to pressure, and soon ulcers. There was no improvement in the symptoms, but he gradually lost strength. He however, continued to sit up a considerable portion of the day till the 16th of June.

On the 19th of June Dr. Clark saw him with Drs. Parker and Watts. He was then wholly confined to bed ; pale, emaciated, countenance somewhat sallow ; had a very large, deep black slough over the sacrum, and a smaller ulcer on each hip. He had had chills, followed by sweating at irregular intervals for several days ; pulse one hundred and thirty to one hundred and forty, and small ; respiration frequent, with occasionally a sense of constriction and suffocation (the constriction he referred to the trachea just above the sternum) ; twitching of the legs, shoulders, hands, and body ; tongue covered with whitish, hard, papillary elevation ; complained of pain in the shoulder blades ; his mind at times flighty ; bowels evacuated, as from the first, without his knowledge, and now rather frequently ; urine constantly flowing, turbid, containing pus ; a slightly sallow tint of the complexion and skin. He had no pain except that in the shoulder blades. No sensation from the sores about the pelvis. Reflex action brisk, and sensibility almost wholly abolished in the lower extremities. The treatment now was entirely sustaining. It was evident that he had purulent accumulation somewhere, and the increasing icterus indicated the liver as its probable seat. Three days later the scrotum became erysipelatous and much swollen. He died on the 24th at half-past twelve A.M., having just demanded to be

raised to the sitting posture in bed—a moment after being raised he breathed his last.

Post Mortem Examination.—Seventeen hours after death, thermometer 70° at 7 A. M. Weather damp and sultry. No rigor mortis in any part of the body. The whole surface pretty deeply jaundiced. Erysipelatous blisters on the thighs and about the pelvis; the large black ulcer on the sacrum bubbling with the gas of decomposition; tissues of the back watery and pale.

The spinal canal was opened from behind, and the spinal cord removed from the 3d cervical to the 1st lumbar vertebra. On the anterior face of the theca, in the lower dorsal region, were spots of ecchymosis, an inch or so in length by half an inch in width, but there were no corresponding marks or change on the arachnoid surface, or in the cord. The theca and arachnoid were stained of a tan or brownish color by the decomposing blood, or imbibition of hematin. The Cord was of usual firmness from above downwards as far as the 4th dorsal vertebra. Here was a portion one inch in length, so much softened on its anterior half, as to fluctuate like a small abscess. Cut into, it was semi-fluid, of a whitish drab color, showing no trace of fibrous arrangement, and no stain of yellow to mark a former apoplexy. This softening was equal on the two sides, but did not so much affect the median portion, where a narrow septum, perhaps one-sixteenth of an inch in thickness, of only partially softened tissue, separated the pultaceous portion on the right and left. The posterior portion was also softened, but to a less extent, and was not wholly pultaceous. The arachnoid covering this softened part was united to the thecal arachnoid by three or four delicate threads of adventitious tissue, showing the former presence of adhesive inflammation. The same kind of threads were noticed both above and below the softened part for a little distance. Above and below the softened portion for the space of two inches and more, the vessels within the cord were numerous, large, and full. There was, however, in these portions no loss of firmness. The contrast of color between the softened portion of the cord, and the firmer parts above and below, was sufficiently striking; the former, being of dull, whitish drab, without any mark of vascularity; the others were (after exposure) of a pale pink, showing vessels as large as a small-sized sewing thread.

The *Liver* was large, weighing perhaps six pounds, as dark colored as dark blood could make it, and thickly studded with small abscesses. These purulent deposits varied in size from a No. 7 shot to duck-shot, and a few nearly one-half inch in diameter—irregular in shape.

These occurred on the surface, once in every half to three-fourths of a square inch. In the interior of the organ they were not quite so abundant. No inflammation of the capsule

All the tissues of other parts were moderately stained with bile. Brain and thorax not examined.

Dr. Clark observed that the inquiry regarding the cause of this softening was interesting. The symptoms of the attack in June, 1854, all point to apoplexy as its most probable source. That attack was sudden. The paralysis was complete for a few hours, and after that there was gradual improvement for nearly eleven months, with neuralgic pains in the legs; then came sudden, complete, and permanent paralysis, in which there was no neuralgic pain. The last attack was beyond question caused by softening, that had been insidiously going on for some time before the sudden development of the symptoms. Regarding the first, it is true, that the examination after death did not reveal a blood-stain, or any other mark of former apoplexy, but it is easier to suppose that the blood may have been wholly absorbed and yet have provoked the softening, than to infer that the symptoms of softening would undergo such marked improvement through a period of eleven months.

Dr. Metcalfe then presented the *kidneys* removed from a man forty years old, admitted into Bellevue Hospital, suffering from a slight diarrhœa, of which he was relieved in a few days. His account of himself was unsatisfactory, his intellect being obtuse. He stated he had for some time been inconvenienced by an affection of the bladder, causing a frequent desire to pass his water. His urine was withdrawn by a catheter, and found to contain a large quantity of albumen, also pus and blood in considerable abundance. The next day he gradually sank, becoming comatose just before death.

Post Mortem Examination.—The *bladder* contained two or three ounces of bloody brick-dust colored urine, similar to that drawn off during life by the catheter. On the inner surface, corresponding with the trigonum vesicale, was a slight thickening and roughness of the mucous membrane from chronic inflammation. Nothing abnormal was observed respecting the ureters, except some distention of that of the right side.

The *kidneys* were enlarged, weighing seven and one-half ounces. The surface seen through the capsule, which was easily detached, was irregularly nodulated, the nodules being generally not larger than those of a cirrhotic liver. In color they were mottled, red and white. A section through them showed considerable atrophy of the cortical

portion, with general albuminous infiltration of the cellular tissue. The tissue was hard and cut much like the liver in cirrhosis. Small masses, having the appearance of miliary tubercles, were scattered through the kidney. Here and there were purulent collections, in size from a duck-shot to one-half inch in diameter, with well marked, thick, firm cysts, separating them from the renal tissues. Many of these cavities were anfractuous. The renal artery of the left kidney was as large as a goose quill. The walls were very much thickened, and the vessel penetrated between the apices of two pyramids before subdividing.

Microscopic Examination showed that the cavities contained broken down tuberculous matter, mixed with abundance of pus. In many places the tubes and cells were perfectly healthy. In a few there was well marked fatty degeneration of the epithelial cells. There was much new tissue, the result of simple exudation, as was shown by the great abundance of fibro-plastic cells found in all parts examined.

Nothing else abnormal was observed in the abdominal contents. The thoracic organs were healthy, except that each lung contained in upper two inches, a small amount of miliary tubercles. The tissue was crepitant on pressure, and presented not the slightest trace of yellow or softened tubercle. The brain, normal.

Dr. Metcalfe remarked, it would seem an inevitable inference from the history of this case, that the tubercular deposit occurred primarily in the kidney. It thus furnishes us with a rare illustration of an exception to the general law of tuberculosis occurring in the adult. It is, moreover, of much practical interest, by showing how great organic lesions may exist, with but trifling indications from general symptoms.

Dr. Metcalfe next presented a specimen of *ulceration* of the *appendix vermiformis*, occurring in a young gentleman nineteen years of age. Of good constitution, and without ever having suffered from serious illness, he commenced to complain of slight colicky pains in the abdomen, with a little febrile excitement and nausea, on the 2d of May, 1853. In his absence, his friend *Dr. J. H. Borrowe* (from whom the history of the case has been obtained) was sent for, who, in addition to the symptoms above mentioned, noticed a furred tongue and a yellowish hue of the skin. There was no pain on pressure over the abdomen. A cathartic (calomel and scammony) ordered—it did not operate. The next day, June 3d, although complaining of slight nausea, he dressed himself and came down to the drawing-room. No heat of skin nor quickness of pulse. About twelve o'clock in the day, he had a rigor. The night was passed restlessly, he complained of a general

uneasy, painful sensation over the abdomen. The next morning, at seven o'clock, Dr. Borrowe was sent for. He found the patient with a small rapid pulse; cold, clammy skin; tympanitic and tender abdomen, and collapsed face. He, at once, suggested the probability of peritonitis from intestinal perforation, and expressed his grave fears of an unfortunate termination. He was at once placed on the opium treatment. At 11 A.M., was seen in consultation with Dr. Van Buren. The state of collapse had continued, pulse of same character, one hundred and fifty per minute. Fifteen leeches to the lower part of the abdomen, and opium to be continued in quantities sufficient to control the pain. In the evening some slight reaction had taken place; opium continued, and in addition a blister covering the abdomen. At twelve o'clock at night, Dr. Metcalfe saw him, with Drs. Borrowe and Van Buren. He was then quite tranquil, evidently from the effects of the opium. The skin was warm and moist; the pulse one hundred and twenty; respiration natural in frequency, thoracic; tympanites; great abdominal tenderness; frequent eructation of gas. To give beef tea, brandy and water, and milk punch as stimulants and nourishment. To continue the opium *pro re natâ*. The symptoms continued without material change until the morning of the 4th. Dr. F. U. Johnston was then added to the consultation. At this time it was noticed that the pulse was failing, and that there was a tendency to coldness of the extremities. The same treatment was continued. About 3 P. M., he commenced to sink, and without a struggle, expired an hour afterwards. Consciousness and intelligence were natural, until a few minutes before death, when there was a little wandering of the mind.

Post Mortem Examination.—Twenty-three hours after death, weather temperate. From having been kept in ice, there was great muscular rigidity. On opening the abdomen (the only cavity examined) a small puff of fœtid gas escaped as the knife penetrated the peritoneal sac. This was found to contain a few ounces of turbid, brownish-yellow fluid, having the odor of fœcal matter, most marked in the right iliac region. Elsewhere, there was arborescent injection of the peritoneum, but no effusion, save in one or two spots near the commencement of the large intestine, where exudation of plastic lymph was observed. By this, the caput coli and appendix vermiformis were adherent to the mesentery, which at this point was intensely congested with blood.

On being carefully separated from its adhesions, the appendix was found to contain some hard body, as large as the end of a man's mid-

dle finger, impacted in the diverticulum, not more than a quarter of an inch from its intestinal extremity. Beyond the obstructing body, the appendix was dilated, in its whole length, by fluid, which had apparently been prevented from passing into the cæcum by the plug referred to. Opposite to the latter was a perforation from sloughing of the walls of the vermiform process, which had allowed the intestinal contents to escape into the peritoneal sac.

The cause of the obstruction was found to be a hardened stercoral mass, measuring half an inch in diameter, in which were imbedded small bits of undigested vegetable fibres, and small fruit seeds, apparently those of the strawberry.

PART IV.—CHRONICLE OF MEDICAL PROGRESS.

The Trial and Conviction of Luigi Buranelli for Murder. Plea of Insanity.

The execution of this unhappy man for the murder of Joseph Latham has strongly excited the attention of the medical profession, and has been the cause of much animated discussion in the medical journals. The conviction was obtained in opposition to the evidence of at least one medical witness, the value of whose opinion as a mental pathologist is second to that of no man in this or in any other age or country; and the extreme penalty of the law was inflicted, notwithstanding the strenuous exertions of several medical men, who were highly competent, either from personal knowledge of the convict, or from their high standing in the profession as mental pathologists, to form a trustworthy judgment upon the soundness or unsoundness of the prisoner's mind. The action of the executive was indeed supported by the opinion of two physicians of reputation, so that it may possibly have been held that the evidence of the skilled witnesses on each side neutralized each other, and thus left the guilt of the accused to be decided upon principles of common sense, unaided by any rays of light shed from the lamp of science.

This trial has presented the painful and humiliating spectacle of mental pathologists differing entirely in their judgment, not only upon the particular question of sanity or insanity of the accused, but also upon the general questions of the nature of illusions and delusions,

and the value of these and other phenomena as marks of cerebral disease. The fact that the man respecting whom these questions arose has been executed, does not diminish the necessity of ascertaining their true answer. He, it is true, is no longer stretched upon the rack of this rough world, but the very feeling that if his presumed responsibility was a mistake, and his death a judicial blunder, it is now irrevocable ; adds weight to the importance of an inquiry, having for its object a more clear comprehension of the grounds upon which future cases must be decided.

While medical men are ever striving to fathom the mysterious depths of psychological speculation, the more practical men of the law are deciding and disposing of their actual cases, and going on to new ones ; disposing of them too often in a manner which admits of no reconsideration, which, adding precedent to precedent, adds nothing to wisdom, and leaves each new case to be decided on the shallow experience which precedents without broad and true principles are alone capable of supplying.

The result of Buranelli's trial has illustrated the existence of a wide chasm between the opinions of medical men and the existing state of the law. It has been assumed, not only at the trial itself, but still more explicitly in the able articles which have appeared upon it in the *Lancet*, and in the letters of Mr. Henry, that it is sufficient to prove that a man is insane in order to purge him of guilt in the eyes of the law ; that insanity, without reference to its degree or kind, implies legal irresponsibility. This however is an assumption utterly without foundation. Whatever opinion may be held by metaphysicians respecting the intimate nature of the bond which unites insanity and irresponsibility, the law of England is positive in its requirement of a certain amount and kind of insanity to exonerate a criminal from the consequences of his act. From the time of Coke to the present time, the English judges have been unanimous in requiring, that to exempt from punishment, proof must be given of the existence of insanity from which irresponsibility can be reasonably inferred, either from its destroying the power of distinguishing between right and wrong, or from its having been accompanied by delusion ; which resulted in the overt act ; or in some other manner. Sir Matthew Hale explained that the reason the plea of insanity needed this limitation was, because a great number of real criminals might be said to be in some sort insane, and that partial insanity of this indistinct kind was never intended by the English law to serve as an excuse for crime. The law of England in regard to the plea of insanity is

the same at the present day as it was in the time of Elizabeth and Charles II., inasmuch as it does not recognize any slight deviation from mental health to be a valid excuse for crime, but that it requires proof of the existence of disease which has assumed a definite character. Mental physicians on the contrary have assumed, that any degree or kind of insanity is sufficient to exonerate from the punishment due to crime. They have fallen into the common logical error of shifting the premises *a dicto secundum quid, ad dictum simpliciter*. The irresponsibility which is predicated by the law of England of insanity *secundum quid*, medical men have assumed to be predicated of all kinds and degrees of insanity whatsoever, which is an obvious fallacy. The law exempts the decided idiot from punishment as completely as the decided lunatic ; but if we apply to the former the reasoning which medical men assume to hold good in its relation to the latter, the absurdity of the proposition will at once appear ; thus : Some persons of weak intellect are incapable of crime and exempt from punishment ; A. B. is not quite so sharp as he should be ; therefore he is incapable of crime and exempt from punishment. A conclusion which would prostrate society under the donkey hoofs of vicious and brutal stupidity. This fallacy is one from which those who use it cannot escape by asserting, or even proving, that any kind or degree of insanity *ought* to exempt from *capital* punishment. For the question is not as to the justice of this opinion (one in which we entirely agree), the question is not as to what ought to be the law of England, but as to what is the law. We entertain a strong conviction that the law needs modification and relaxation to admit the influence of real extenuating circumstances, of whatsoever kind ; an opinion which we doubt not prevails widely among those who have reflected upon this subject. [See an excellent paper on *Crime and its Excuses*, by the Rev. W. Thompson ; Oxford Essays, 1855.] But opinions of this kind are out of place when the real question at issue is whether a particular instance falls within or without the limits of the law as it actually exists. Such opinions, if they are sound and just, are at least in advance of legislation, and are therefore out of place in the deliberations of a court of justice.

We trust that the thorough discussion which the case of Buranelli has been the occasion of, may result in a nearer approximation of the criminal law, as it relates to the partially insane, to the most enlightened doctrines of mental pathology. No truly humane person can fail deeply to regret the execution of any one whose mental faculties have been in the slightest degree warped by disease, however

unconnected the motive of the crime may have been from the mental aberration. Nor on the other hand can any sensible man refuse to admit the danger of granting complete immunity from punishment to all offenders, whom the fine-drawn distinctions of modern science are able to recognize, as presenting instances of aberration however slight from the standard of cerebral health displayed in the integrity of the intellectual and moral functions. The only practical solution of the difficulty appears to be in the judicious employment of secondary punishments ; a course which has for many years been adopted in Ireland, the Lord Lieutenant having in many instances, upon the recommendation of the inspectors of lunatic asylums, commuted the sentence of death to that of transportation. An institution like that, recommended many years ago by Dr. Forbes Winslow, "between a prison and an asylum," would undoubtedly afford a much more appropriate means of disciplinal correction, than the ordinary convict establishments ; and the establishment of some such institution we confidently predict, since it appears to be a necessity of the age, arising not less from increased knowledge of the nature of modified crime and of partial insanity, than from increased pity for the unhappy beings who commit the one under the influence of the other.

The story of Luigi Buranelli may be told in a few words, for the facts of the case were simple and undisputed. He was an Italian, and had formerly been in the service of the Abbé Stewart. His master was assassinated while bathing, and, after this event, Buranelli came to London, in the hope of receiving from the executors, a sum of money which his master had promised him as a legacy, but which the untimely death of the latter had not allowed him to bequeath. He entered the service of a Mr. Crawford, and won the good opinion of all who knew him, by his amiable temper and cheerful manners. In 1850, his first wife, an Italian, died ; on which occasion his master, Mr. Crawford, stated, that his grief was most exaggerated. He was inconsolable, was continually weeping, said his sufferings were greater than he could bear, and that he thought he must destroy himself. In 1851, he married again. His second wife was a native of Penshurst in Kent, at which place he worked as a tailor. He was a very sober, quiet, inoffensive person. In 1854, his second wife died in childbed ; and after this he exhibited great depression and melancholy. He used to say, "Poor Louis, poor Louis, many troubles, many troubles," often said he would throw himself into the river. He would not be left alone, and a little boy was employed to be with him. He asked a woman named Simmons to buy laudanum for him. At

this time he came under the notice of Dr. Baller, who treated him for congestion of the liver, and operated upon him for a small fistula in ano. After the operation he was violent and unmanageable, and tore the bandages away.

Dr. Baller thought him suffering from melancholia. "He had many extraordinary delusions on the subject of his malady, and from all the facts which were within Dr. Baller's knowledge, the latter came to the conclusion that his mind was affected." He left Penshurst in the Summer of 1854, and came to London, where he entered the Middlesex Hospital, to be treated for the remains of the fistula, upon which Dr. Baller had operated. What remained of this fistula was of a very trifling character, and Mr. Henry, the assistant surgeon, told him so; but found that he had extraordinary opinions respecting it, especially that it was connected with the bladder, and that his bed was flooded with urine which ran from it. Mr. Henry endeavored to convince him that these opinions were erroneous, and passed a catheter for that purpose; "but what he said had no more effect on the patient than if he had spoken to a stone wall. He was decidedly of opinion that the prisoner's mind was not in a sound state." When in the hospital, he was in a very low and desponding state, and would frequently cry for hours together. When he left the Hospital, last Autumn, he went to live with the man who went by the name of Lambert, but whose real name was Latham, whose life he subsequently took. At this time he cohabited with a fellow lodger, named Jane Williamson. This person thought him a man of great imagination, but did not think him insane. He went to theatres with her, and he read operas very much. She thought herself in the family way by him, and spoke of it to Latham, saying she wished him to leave the house. Latham made him leave on the 28th of December last. He wrote to Williamson, entreating interviews, which she refused. The landlady of the house in which he lodged, after leaving Latham's house, stated that for two or three days before the murder was committed, he was in a very excited state, and she heard him on one occasion talking very loud, and she thought some one was with him; but upon going to his room, she found no one was there but the prisoner, who was walking about and gesticulating with violence, as though he had been addressing some one. On the 7th of January, having previously bought pistols, under the pretence they were for a friend going to Australia, he made his way to Latham's bedroom, and shot him dead, he also wounded the woman who lived with Latham as his wife, but not fatally, he then rushed up stairs to

the bedroom door of Jane Williamson, which was fortunately fastened, said Latham was dead, and that he was an assassin; went into an adjoining room, reloaded a pistol and shot himself, but the ball did not take a fatal direction, and lodged in the posterior nares. He lay on the floor when the police sergeant came, crying, "I shall die, I am a murderer, I am an assassin." On being removed to the Middlesex Hospital, he there made a clear statement of the manner in which he had committed his crime, to the police sergeant and the inspector: he said, moreover, that Latham had threatened to strike him; that when he did not get answers to his letters to Jane Williamson, he became desperate, and bought pistols for the purpose of shooting the whole of them. He was removed from the Middlesex Hospital to Newgate Goal. While in the latter place, he was under the frequent observation of Mr. Macmurdo, the surgeon of the gaol, who never saw anything in his conduct to justify him in coming to the conclusion that he was of unsound mind. He thought him suffering from hypochondriasis, which would account for the opinions he entertained respecting the fistula. The prisoner complained of having passed blood from the rectum, which Mr. Macmurdo attributed to internal hæmorrhoids, but did not ascertain by examination whether such were the case or no.

Dr. Mayo had had an interview with the prisoner of an hour and a half in duration, on the day preceding the trial. His opinion coincided with that of Mr. Macmurdo. He had examined the prisoner at the desire of the government. Dr. Sutherland had also had his attention called to the case by the government. He had conversed with the prisoner for an hour and a half on different subjects, and he did not observe any symptom of aberration of mind. He had heard the evidence relating to the delusions of the prisoner on the subject of his malady, and he was of opinion that they were merely *illusions, the result of hypochondriasis, and not delusions that were the result of insanity*. Dr. Conolly had heard all the evidence, and the result he had arrived at from all the facts was, that the mind of the prisoner was in an unsound state. The jury brought in a verdict of guilty; sentence of death was passed; and, notwithstanding a petition to government, praying for commutation, and signed by Dr. Conolly, Dr. Forbes Winslow, Dr. Bailey, and other medical men, this sentence was carried into execution.

Taking for granted the truth of all the above facts given in evidence (of which indeed there is no reason to doubt), it is evident that the question of the sanity or insanity of this unhappy man at the

period of the commission of the crime, was one of considerable difficulty.

On the side of the prisoner's insanity, the facts of the greatest importance were, the change of habits and of feelings which took place after the death of his second wife, the mental depression and disposition to suicide, the absurd opinion respecting the nature of a trivial disorder, and the unreasonable and excitable behaviour which led him to tear off surgical bandages—after his admission into the Middlesex Hospital, the continuance of depression of spirits, and of the absurd opinion respecting the fistula (which was then absolutely healed); that it was connected with the bladder, and that his bed was swimming with water which ran from it: and finally, the violent gesticulations, and loud and excited talking, which, according to Mrs. Gurney, existed two or three days before the murder.

A great change of disposition following the death of a beloved wife, displaying itself by deep mental depression, with tendency to suicide, and accompanied by a delusion, present a train of circumstances for which it is extremely difficult to account, except upon the supposition of insanity. Upon the violent excitement of manner and language immediately preceding the murder, little stress ought to be laid; because it is so easily to be accounted for, as the expression of the rage of a disappointed lover, and moreover because such violence of conduct is scarcely to be viewed as a symptom of the particular form of insanity from which, if from any, this man was suffering. Such vehemence is oftentimes a symptom of mental disease, but it is scarcely to be admitted as a symptom of the disease under which the other evidence for the defence went to prove that Buranelli was laboring.

On the other hand against the supposition of the prisoner's insanity, it may be argued—That the grief which succeeded the death of the prisoner's second wife was not the result of disease, but the display of natural feeling by a person of acute sensibilities: that even in the evidence for the defence, it was proved that he displayed a similar kind of feeling on the occasion of the death of his first wife; that he then spoke of suicide, and cried for days together; and that notwithstanding his extreme grief, he quickly married again; and that even after the death of his second wife, which was assumed to have caused his insanity, he took an early opportunity to enter into the illicit union with Jane Williamson, the rupture of which led to the commission of his crime. That if Buranelli was actually suffering from suicidal melancholia, with delusion at any time when he was under the treat-

ment of Dr. Baller and Mr. Mitchell Henry, it was extraordinary that neither of these gentlemen "subjected him to medical treatment for mental disease," or took any steps to procure such treatment for him. That after he left the Middlesex Hospital, neither the Lamberts (or Lathams) with whom he went to live on their own invitation, nor Jane Williamson, with whom he cohabited, and in whose society he spent much of his time, had any idea that he was insane; and it was certainly strange that he never mentioned his peculiar delusion to Jane Williamson, with whom he slept. That granting the existence of his delusion before his discharge from the Middlesex Hospital, it does not appear either that he continued to entertain it, or even had he done so, that it had any relation to the crime. It may be further argued, that not only was the motive for the crime foreign to any form of delusive idea, but that it arose from what may be even called a natural and sufficient motive. An ardent Italian is jilted by a woman with whom he is deeply enamored; he is ignominiously turned out of the house in which she lives, and his impassioned letters of expostulation and entreaty are contemptuously disregarded. Is it wonderful, or requiring the explanation of unsoundness of mind, that he should become desperate and think of revenge; he to whose imagination the revenge of the Corsican brother appeared in an heroic light; he born in the hot South, and coming from a race in which it has long been a custom, and almost a right for individuals to exact bloody reparation for deep personal injury; one of a people whom bad laws and corrupt governments have deprived of public justice, and have forced into the habit of looking to personal redress for wrong. Truly to a person who will reflect upon the character of the criminal, and upon the provocation he received, extenuating circumstances will present themselves, without adopting the theory of unsound mind; circumstances which, regard for the public security, may not permit to be pleaded in bar of human punishment, which yet claim the mead of human pity, and compel us to the belief that they will receive their full mitigating value in the judgment of that Judge whose mercy is eternal.

The crime then was not connected with any delusive opinion; nor was it motiveless, but caused by a motive sufficient to produce it in a man of sane mind. Moreover, Buranelli himself appreciated the nature of the act at the very time when he did it. At Williamson's door he called himself an assassin before he reloaded his pistol for the purpose of self-destruction, and immediately afterwards he said, "I am a murderer, I am an assassin." This knowledge of the nature

of the crime in the particular instance, is that which Hume, the philosophic jurist on Scottish criminal law, insists upon as the test of responsibility, and is that which Lord Lyndhurst, one of the most able of the English judges, also adopted, when he directed the jury to acquit Oxford, "if satisfied that he did not know, when he committed the act, what the effect of it, if fatal, would be with reference to the crime of murder."

From the date of the murder, on the 7th of January, to the trial, on the 12th of April, there is no evidence of any symptom of unsoundness of mind, although during part of his time the patient was in the Middlesex Hospital on account of his wound, and therefore under the observation of the medical gentlemen who had observed the previous symptoms. There was neither depression, nor delusion, nor perversion of feeling. The positive evidence of Drs. Sutherland and Mayo, and of Mr. Macmurdo, with the absence of evidence to the contrary, must be accepted as conclusive as to the fact of the non-existence of insanity after the crime and before the trial. After the trial also it is certain that the condemned man enjoyed the integrity of his mental faculties; indeed, he displayed an amount of firmness and manliness, which was neither to be expected under such circumstances from the excitable, sensitive hypochondriac, nor from the desponding lunatic. The pity and sympathy of good men went with him when he baffled the churlish priest who refused him absolution, because in the last hours of his life he would not break his promise to his dead wife, respecting the bringing up of their daughter.

After Buranelli had paid the last penalty to human law, his brain was examined by Mr. Stevens, the Medical Superintendent of St. Luke's Hospital, who found no traces of disease, either in the brain itself, or in its membranes.

If the above facts and considerations are duly weighed, we think the most reasonable conclusions to be deduced from them are as follow:

1st. That during the latter part of Buranelli's residence at Pentonville, and during his first stay in the Middlesex Hospital, he was the subject of mental depression, accompanied by an erroneous opinion, which one can view in no other light than that of a delusion, the result of morbid cerebral function. Of this there is excellent and direct medical evidence.

2d. That from the time of his admission into the Gaol at Newgate, to the time of his execution, he was of sound mind, without delusion or morbid depression. On this point also the medical evidence is, in our opinion, irrefragable.

3d. That from his first discharge from the Middlesex Hospital to the commission of the crime, a period elapsed, during which there is no medical evidence respecting the state of his mind. Respecting this all-important period it may be argued with almost equal fairness, that because he was insane before, therefore he was insane at this time; or that because he was sane afterwards, therefore he was sane at this time. The medical evidence of his sanity during the early part of the present year may be as correct, and not more so, as that which testified to the unsound condition of his mind during last Summer. They neutralize each other as to the probable condition of his mind during the Winter months which preceded the crime. It therefore remained to the Court to ascertain from other sources than facts observed by medical men, what the condition of the prisoner's mind was during the months which immediately preceded the crime, and especially at the time of its actual commission. In coming to a decision upon this, the critical point of the case, the Court might be aided by medical opinion, but all medical evidence of fact was absent; and the Court had to come to its own conclusion upon data furnished by the conduct of the prisoner towards those with whom he lived, and by the motive of the deed and the manner of its perpetration,—to a conclusion not as to the general soundness or unsoundness of mind of the prisoner, respecting which metaphysicians and psychologists might speculate and split straws for ever, but to a conclusion as to the existence of a certain kind of insanity, of insanity *secundum quid*, of insanity which would exonerate the prisoner from the consequences of his act, according to the traditions and precedents of the English law and the rulings and charges of the English judges; of the existence of a delusion which instigated the crime, or the existence of insanity in some form or other, which prevented the prisoner from distinguishing between right and wrong, or “of knowing what the consequence of the act would be with reference to the crime of murder.”

Our own deliberate and impartial opinion is, that the evidence of the state of Buranelli's mind was insufficient to justify his execution, and that it was equally insufficient to authorize his entire acquittal. It was just such uncertain and undecisive evidence as that which has induced Dr. Forbes Winslow to urge the adoption of a middle course, by a verdict of “*guilty, with recommendation to mercy on the ground of presumable insanity.*” (*Psychological Journal*, No. 17, p. 123.)

The not unfrequent occurrence of such cases of balancing probabilities, has urged us to advocate for many years past and in various

writings, a modification of the present unbending stringency of the law, and especially to urge the adoption of secondary punishments in cases of capital crime, wherein there are "extenuating circumstances connected with the psychological condition of the accused," which, although insufficient to justify an unqualified acquittal, are just and legitimate grounds for preventing the infliction of the severest penalty of the law. Such a system of punishment, modified according to degrees of responsibility, is not only recognized as a fundamental part of the law of France, but it has already in many cases been acted upon in Ireland, in consequence of the wise intercession of the Inspectors of lunatic asylums in that part of the kingdom. It appears that the Inspectors of lunatic asylums in Ireland have not only actively interceded with the Government, to obtain a remission of the sentence of death to several persons convicted of murder, on the ground of presumable insanity, but that they have done so from their own personal observation of the prisoners, by frequent visits to whom they have been able to make reports to the Lord Lieutenant, upon which he could act with security. Thus the enlightened humanity and activity of the inspectors have in Ireland supplied the place of the French experts, and provided the government with a mode of escape from the consequences of the defective forms of legal procedure.—*Asylum Journal* (England).

Colica Bacchanalium. Colic of Drunkards. By J. HERBERT CLAIRBORNE, A.M., M.D., Petersburg, Virginia.

We believe there is no disease of this name described in any treatise upon practical medicine of the present day ; but we are confident that the title will at once attract attention among Southern practitioners, and that more than one will be enabled to recall to mind cases of colic that could be properly designated by none of the distinguishing cognomens of the books. We read of *Colica Biliosa*, *C. Crapulosa*, *C. Flatulenta*, *C. Idiopathica*, *C. Madridensis*, *C. Pictorum*, *C. Uterina*, *C. Verminosa*, *C. Nephritica*, &c., &c., &c., to which list we wish to append still another—*C. Bacchanalium*. We will recount such of the phenomena of this peculiar variety of colic, as entitle it in our opinion to a distinct consideration, if they do not establish for it the claim of possessing a "local habitation and a name."

The term itself, colic, usually taken as a derivative from the word colon, is not unapt to mislead the critical student, who naturally looks for the disease in that organ from which he supposes it to derive its nomenclature. Clinical experience, however, soon makes him aware that other portions of the intestinal canal frequently take on this colon disease, and he learns to assign to it a special character, disconnected with any idea of the origin of its name. In the colic of drunkards, we think that the colon is not often much affected, and are firmly persuaded that it is never primarily the seat of the malady. The duodenum, the jejunum, the ileum, are each—and often successively—the seats or points of attack of the disease, until the whole of the small intestine seems to be writhing under its cruel torture.

The disease sometimes occurs during the course, or in the finale of a drinking bout; but oftener in the person of a regular, free drinker, who is generally steamed up pretty high, though never, it may be, sufficiently far to lose character for propriety. The patient is not usually attacked suddenly, but will complain some days of anorexia, lassitude, constipation, accompanied with a dull, oppressive pain about the duodenal region, gradually becoming more marked and distressing, until its intensity, as well as the concomitant constitutional disturbance, call imperatively for interference and relief. It is never entirely intermittent, but sometimes remits under the action of remedies, recurring, however, repeatedly, in all its intensity, until it entirely succumbs to treatment, and the patient recovers. It is sometimes described as being intolerably severe, and the most stoical will cry out with the agony endured in its paroxysms. Occasionally it is attended with spasms of the whole muscular system, and the patient will be thrown into frequent and fearful convulsions. At the first of the attack, the pain is mostly referred to the right hypochondriac region, though it gradually extends until it reaches the neighborhood of the umbilicus, and finally is complained of as covering the whole abdomen. We have seen several cases in which, towards the issue of the disease, the patient would refer to a distressing and lancinating pain just over the bladder, and even behind the symphysis pubis. There is constipation of the bowels, with tenderness on pressure, especially over the upper portion of them, but no swelling or distension. This constipation is only occasionally very obstinate, but may generally be quite easily overcome with the usual remedies. The dejections, when procured, are dark, thin, and offensive. The tongue is thickly coated with white fur, and rarely, and in the latter stages only, red and dry. There is thirst also; and considerable constitu-

tional disturbance. The pulse hard, quick and fretful—not often very rapid—but varying with the intensity and duration of the case. The urine is scarce and ruddy, and owing to some slight vesical paralysis, the patient will occasionally complain of inability to pass it. The secretions from the skin are often profuse, but I have rarely seen it jaundiced.

The duration of the disease is from three to ten days. The pain, when subsiding, as in most spasmodic affections, usually departs suddenly and entirely.

The season of the year in which the disease usually appears, is the early hot months of Summer. I have never known a case to occur in Winter, or after the first frost of Autumn. One attack seems to predispose the patient to another ; and unless he is very cautious, he may have several during one Summer. The only surety against its invasion in a person who has once been subject to it, is absolutely to eschew all alcoholic drinks during the hot months. I know a person who, until last Summer, had rarely failed of having several attacks during the season. By my advice, and in the remembrance of some severe lessons taught by his own experience, he entirely restrained from drink at that time and escaped. It confines itself to the followers of no special calling or profession, attacking indiscriminately those who fill its two essential requirements—free drinking and exposure to a hot climate. Exposure to the night air, or some irritating article of ingesta, appears occasionally as an exciting cause ; but it must always be in a subject, as the mesmerizers say.

After one has had several attacks of drunkards' colic, paralysis occasionally supervenes—not confined to the forearms, as is usual in lead colic—but of the lower extremities also—and after several severe attacks, I have seen a patient almost utterly helpless.

This leads us to the diagnosis. The spasmodic nature of the affection, the seat and violence of the pain, with the accompanying constipation, mark the disease at once as a colic. No one can mistake it. But what are the features of the case entitling it to a special consideration, as distinguished from other varieties of colic ? Of the several varieties named, it bears most resemblance to two, viz : bilious and metallic or lead colic. From bilious colic, it may be distinguished by the insidiousness of its approach, by the absence of the very high arterial excitement which usually attends that disease, by the want of the symptoms of primary bilious derangement, by occurring invariably in intemperate persons, and by the consequent paralysis. From lead colic, it may be distinguished by the absence of that obstinacy

of constipation which usually attends that disease, by the failure of the appearance of the lead line on the gums, frequently by the impossibility of there having been any metallic poisoning, by its occurring invariably in inebriates, and in the Summer season, while lead colic is not peculiar to any class or partial to any season.

We believe the disease to be the same as the dry bellyache of the West Indies—which has been usually regarded as lead colic, and been attributed to the free use of rum, supposed to be adulterated with lead. Dr. Chisholm, however, remarks of it,* that, though doubtless induced by the free use of alcoholic drinks—alternations of heat and cold contributing also as excitants, yet the “poison of lead has no part in its production.”

The colica madridensis, and indeed the colic of the tropics generally—the disease so graphically described by Dr. Fermin,† whose horrors at Surinam have gotten it the significant title of “Beillac, or Devil’s work,” and which he distinctly attributes to the free use of ardent spirits, and passing the night in the open air—are all, we believe, instances of colica bacchinalis—originating in the same pathological conditions, and alike independent of the introduction of any lead into the system.

The nature of the disease it is not difficult to define without the aid of the scapel. The behavior of any material, containing so large an amount of hydrogen and carbon as alcoholic drinks, when introduced into the circulation, and the system subjected to the influence of tropical heats, can be very readily predicted. It would be equally an anomaly in animal chemistry, and inconsistent with the teachings of practical experience, to read of an attack of drunkards’ colic occurring in the high latitudes of Nova Zembla ; but it would also be incredulous, to hear a man that could supply his blood with spirit *ad libitum*, at the foot of the Antilles, and feel no qualms of physical conscience. In the extreme North, he could find home consumption for almost any amount of alcohol that might be made to flow through his veins; for in the deep and rapid inspirations of that climate, he would carry in oxygen enough to burn it off at the lungs. Indeed, the Greenlander is instinctively aware of the necessity of his keeping up steam ; and he constantly renews the fires of his animal furnace with blubber and train oil—similar in composition to alcohol—which Providence furnishes him in the walrus, the seal, and the whale; and which

* Manual of the Climate and Diseases of Tropical Countries.

† Traite des Maladies a Surinam.

he is compelled to exert his energies to capture. Under the equator, on the contrary, the listless enervate—half-torpid, as one of the native reptiles, has but to put forth his hand and gather the luscious fruits that heaven has hung within his reach, and which nature teaches him are the proper and refrigerant food for his body. A change of habit and aliment would be equally fatal to both parties.

But any one who will take the trouble to compare the chemical formula for animal oils and alcohol, will see how nearly the latter approaches in composition to the calorific aliment of the people of the Arctic regions. And when it is remembered that ardent spirit possesses the additional property of stimulating the heart's action, and thus driving through the relaxed capillaries the poisoned blood, which only full, oxygenated inspirations can purge, it is not wonderful that such baneful consequences should ensue on its use during the heats of Summer. When taken immoderately, under these circumstances, it must either remain in the system, or be inefficiently eliminated by other emunctories than the lungs. Upon the liver chiefly devolves this supplemental labor. It—sufficiently occupied at this season with its own peculiar work—soon succumbs under a double function, and congestion and obstruction ensue.

The blood becomes pent up in the capillaries of the portal vein, the nerve centres of organic life are implicated, the secretions are suspended, peristaltic action is impeded, the innervation of all the primæ viæ interfered with, and colic is one manifestation of the disorder. The presence of some irritating ingesta in the alimentary canal, often acts as the exciting cause of an attack under these circumstances. Exposure to the cold damp air of night, may also be considered as an exciting cause, giving rise in this as in other similar instances, to painful sensations in the disordered condition of the fibrous coat of the bowels; but the pathological condition must always be present to induce the disease that we wish to describe and locate.

A rational explanation of the causes of the paralysis that sometimes ensues on frequently repeated attacks, we had much rather undertake, when Dr. Séquard shall have succeeded in throwing still farther light upon the offices and functions of the spinal cord. It may be that in a succession of attacks, structural changes occur in the frequently congested centres of organic and reflex action, and then we might of necessity expect a paralysis of those functions over which it is the special office of such centres to preside. We have seen some (two) cases in which the paralysis of the lower extremities was so perfect and persistent, and in which the bowels responded so feebly

for a long time to all efforts at catharsis, that we could not doubt in them the existence of more than functional disorder of the spinal marrow. But there have been others, in which there was probably no good reason to suspect any organic change, for which we could no more account than for those cases of paraplegia,* which we read of as sometimes occurring after intestinal irritation, or supervening on nephritic disease, and in which the scalpel revealed after death no spinal lesion. We must probably dispose of them under the comprehensive head of *sympathetic irritation*. We have not yet met with a case that furnished us with an opportunity for necropsy. The intellect has been unaffected in all the cases that we have observed, except where there was a complication with delirium tremens, which sometimes happens.

The treatment presents three prominent indications. We must allay the pain, remove the spasm, and correct the constipation. Opium is peremptorily demanded. The patient is aware that you hold a remedy which will at least blunt his sensibility to suffering, and he will take no denial. Frequently it will require large and repeated doses to give him any respite. Uncombined with other remedies it may be pushed almost to narcotism without his acknowledging any relief. Combined with calomel and ipecac, however, it is much more effective. Indeed, calomel is almost as urgently demanded as opium. There is no remedy which so soon reaches and relieves the engorged capillaries of the portal system. The ipecac is an admirable adjunct, both for establishing the secretions and for allaying the spasms. Tartar we have found too irritating and depressing for many cases. Old staggers who have had the disease frequently, are very susceptible to the action of mercury, and sometimes are badly ptyalized with the exhibition of comparatively a small amount. We have tried in some of these cases for days to dispense with it, and have substituted opium, ipecac, tartar, colchicum, chloroform, &c., &c., until the patient has begged for calomel, and even for salivation.

Generally the constipation is not very obstinate, but occasionally is so. In such cases we have found it very injudicious to administer drastic purges. In operating even, which is not always sure, they give but little relief; and sometimes start an enteritis more unmanageable than colic. When febrile irritation has been high, and the patient strong and plethoric, we have found venesection admirably adapted not only for allaying the spasm of the bowel, but for remov-

* See Dr. Stokes' Clinical Lectures.

ing local congestion, and promoting the operation of other medicines. Leeches, hot fomentations, hot baths, are also excellent remedies; but we have not seen the same benefit following the use of extensive sinapisms and fly plasters, that sometimes accrues from them in the ordinary or bilious colic.

We have seen the disease unabated, with the whole abdomen under vesication; and yet yield in a few hours to the slightest mercurial impression. Indeed, mercury pushed to constitutional action is almost specific. I have not known it fail to give relief in a single instance. The subsequent paralysis, I believe that time will eventually and effectually cure. In cases in which this occurs, the system is generally so reduced and cachectic, that mercury is entirely injudicious when once convalescence has begun. Strychnia I have seen tried with but little benefit, and believe that iron, iodide of potassium, and the vegetable bitters, quinine, gentian, &c., with a plain but generous diet, will be most successful in completing the cure.

The prognosis for final recovery is favorable.—*Virginia Medical Journal*.

A Case of the High or Supra-Pubic Operation of Lithotomy—a large Calculus successfully Removed. By PAUL F. EVE, M.D.

Mr. G—— of Mississippi, a large portly gentleman, now in his 66th year, has been a severe sufferer from stone in the bladder during the last four years of his life. Thirty-three years ago he sustained a dreadful injury from the blasting of rock by gunpowder, resulting in the loss of vision in the right eye, extensive lacerations to the hands and fore-arms, and amputation of the right lower extremity below the middle of the thigh. Notwithstanding these mutilations, and the defects in early education, this patient has by his own individual exertions, thrift and energy, reared a large family, accumulated a handsome fortune, acquired an excellent knowledge of affairs, and is an intelligent Christian gentleman.

The exact date of his vesical distress is not clearly ascertained. An elder brother of his thinks he had some difficulty in urinating when a lad in Virginia. Mr. G——, however, does not trace it back beyond four or five years, and does not therefore attribute it to the personal injury received more than thirty years ago. With the

exception of the calculus affection, he is now in good health, and weighs, even minus the right lower limb, 210 pounds.

The sound in the bladder readily detected a calculus, which by the aid of the finger in the rectum revealed it to be of considerable size ; also the existence of an enlarged prostate gland, and a very deep perineum. By diet, regulation of the bowels, warm bathings and mucilaginous injections into the urinary vesicle, in the course of ten days the stone was seized on three occasions and the full power of the hand applied in vain attempts to crush it with the lithotritor. Satisfied by these manipulations, which were most cautiously practiced, that we had to deal with a large and very hard calculus, an enlarged prostate and deep perineum in a fleshy patient, who moreover had lost one inferior extremity, thus making the buttocks of unequal size, and inclining the pelvis to one side, and the weather being extremely warm, it was decided to perform the high operation, as the one in all probability best adapted under the circumstances to this peculiar case.

On the 29th of May, assisted by Drs. Morton, Watson, and Briggs, and Messrs. Sevier and Eve, the bladder was emptied by the catheter, and some eight or ten ounces of mucilage gradually introduced into it, while the patient was under the influence of equal parts of ether and chloroform. The pubes having been previously shaven, an incision six inches in length was made in the median line above the symphysis through the skin, an inch and a half of adipose tissue, to the linea alba and between the pyramidales and recti muscles. Souberbielle's instrument resembling a large curved silver catheter, containing the *sonde-a-dart* or watch-spring, was now introduced through the urethra into the bladder, its internal extremity felt through the wound, and the pointed spring pushed out above the pubes. A scalpel having its cutting edge turned downwards or towards the symphysis, was next passed in the groove on the concave surface of this *sonde-a-dart* into the bladder, followed by the finger now placed upon the calculus. The instruments were removed from the urinary receptacle, and forceps applied for extraction of the foreign body which it contained. The stone was easily removed from the bladder, but from the violent contraction of the recti muscles, which the anæsthetic condition did not prevent, considerable effort had to be made before it was delivered.

The calculus was not weighed until a few days after its extraction—its weight then was 600 grains. It measures $5\frac{1}{4}$ inches in one circumference and 4 in the other. In size and shape it resembles much

a common biscuit. The patient having it with him for the present, it has not been analyzed.

TREATMENT after the operation. The patient was confined upon his back, a tent introduced through the wound down to the bladder, an open catheter retained in this organ, and opiates freely given. Diet, limited to ice and mucilaginous drinks. He took about $1\frac{1}{2}$ grs. morphine and 100 drops of laudanum during the first 18 hours.

The second day, 30th of May, found patient narcotized, pulse 110 to 118—removed the tent and introduced another. Fluid nourishment.

31st : Cleansed the catheter and moved the bowels by an enema. Pulse to-day pretty steady at 95. Vomited a little chicken water, which was made too rich.

June 1st : Introduced a new catheter and a fresh tent to wound. Gave pills to move the bowels, which acted well. Mild nourishment freely allowed.

5th : A week after the operation, doing well, commenced plugging the catheter for 15, 30, then 60 minutes to 2 hours at a time. No urine has been observed to pass through the wound up to this time.

6th : Removed the catheter. Introduced it again at the end of two hours, when urine was seen escaping above the pubes, and turning the patient on the side, it flowed freely out of the wound.

The patient was again confined to his back with an open catheter in the bladder for another week. As there were no symptoms of inflammation, the wound was now closed for healing.

From warm damp weather it became dry and pleasanter, and the condition of our patient rapidly improved. On the 16th day after the operation, the catheter was closed for a few minutes, and on the 18th of June it was finally removed.

He now began to urinate naturally, the wound over the pubes healed up in a few days, and our patient soon regained his former flesh and health.

Mr. G——— dined out on the 27th, and on the 30th of June left Nashville for Mississippi on a steamer.—*Nashville Journal*.

New York Academy of Medicine.

At the late meeting of this body, on the 18th of July, it resolved itself into a Committee of the Whole, Dr. F. C. Stewart in the chair, for the consideration of the several reports of the Committee on the paper of Professor Horace Green, on the Catheterization and Injection of the Air-Passages, &c. On the motion to adopt the majority report, alluded to in our last, as adverse to the claims of the author to either originality or merit—after a long pause and some skirmishing, a spirited debate sprang up, the thermometer ranging above 90° of Fahrenheit, and the hall being crowded with members and listeners. Dr. Detmold opened the discussion by alluding to the vague, indefinite, and unsatisfactory nature of the majority report, to which the names of only four of the Committee had been appended, while in addition to the report of the minority, two members of the Committee had made separate reports, one of them approving in part only, and the other wholly non-committal; and hence arguing that the Academy could not with propriety adopt either report; he indicated his opinion against taking any action on the subject. The reports being now spread before the profession, would be estimated at their true value both at home and abroad, and this without the adoption or approval of either by the Academy. It will be seen in the sequel that the result of the discussion was shaped by these discreet suggestions of Dr. Detmold.

He was followed by Dr. Shanks, Dr. Stone, Dr. Barker, Dr. Parker, Dr. H. Green, and sundry other gentlemen, arguing pro or con upon the motion; while Dr. McNulty asked and obtained leave to “prove,” as he said, that to introduce a probang, catheter, or any other foreign body into the air-passages, was and is an anatomical and a physiological *impossibility*, for which purpose he exhibited a diagram, models, &c., and gave a descriptive lecture upon laryngeal structure. He acknowledged that he had frequently treated and cured! laryngeal and bronchial diseases, by introducing the sponge probang, after the manner of Dr. Green; but though he always thought and said that he had passed the instrument into the *trachea*, yet, as he had proved this to be impossible, he was now satisfied that he had only entered the *æsophagus*!

This was calculated to settle the discussion by an *argumentum ad hominum*, for he thus “proved” that to be *impossible*! which every member of the Committee, both in the majority and minority reports,

had certified was done repeatedly, and to their entire satisfaction. And, as Dr. Sayre suggested, he had written the epitaph of Professor Gross, and his late work on foreign bodies in the air-passages, by proving that the entrance of any foreign body through the larynx is physically impossible. But Dr. McNulty persisted in his position, qualifying it only by admitting that it did happen, but only by accident and during a momentary relaxation ; but to introduce any foreign body by design, is simply impossible ! He inferred, therefore, that the Academy were stultified by the present discussion, and might have quoted Hudibras :

“ He must have optics sharp, I ween,
To see what *is not to be seen !*”

After a comic interlude, by Dr. Gardner, tending to throw ridicule on the whole subject, by introducing the relevant subject of the “cure of the pip in chickens by cauterizing the larynx,” thus summoning comparative anatomy against Dr. McNulty’s impossibility, the discussion was closed, the Committee rose and reported a recommendation that the whole subject be laid on the table, which was accordingly done.

After this *mons parturient*, the ridiculous muss was the best possible product for the Academy, which is wholly uncommitted, as it ought to be, on the mooted questions involved. Not so with the Committee, for all who signed the majority report, viz : Drs. Parker, I. Wood, Stone, and Metcalfe, are fully committed to the positions therein taken, and of which they are already, if we are not mistaken, beginning to repent. Of their intelligence or of their integrity in the investigation and report, we have heard no impeachment, nor need there be any personal feeling awakened by the opinion very generally expressed, that their report was prematurely made, of which the declinature of the Academy to take action will be cited in proof, the whole subject being laid on the table for the present, and until called up.

Dissatisfied with all the reports, as some of us are, we purposely declined participating in the discussion in the Committee of the Whole, intending to be heard in the Academy before final action. This purpose was anticipated and forestalled by the course taken. Under these circumstances we are free to express our individual preference for a *new Committee*, who shall be instructed to pursue the investigations and experiments commenced by the late Committee, and to report only when something definite and conclusive shall be ascertained. In these days of progress, we have no reluctance that

"Young America" shall go ahead in physic as in other sciences ; and though ourselves denounced as too conservative, and reprobated as identified with "old fogysm," we believe with Professor Parker, Chairman of the Committee, whose report lies on the table, that "the possibility of introducing catheters into the trachea and injecting remedial agents into the bronchial tubes, is now established by the experience of this Committee, and that the profession are indebted for this novelty to Dr. Horace Green, whatever may hereafter be its success or failure in practice." This candid avowal was made by Dr. Parker, in the late discussion, and, as we think, ought to have accompanied the report in terms, as it did inferentially, though its expression was withheld. Had such been the fact, it would have disarmed the imputation of partisanship and personal hostility made in some quarters against the report of the majority.

We cannot forbear recording our admiration of the general good feeling which characterized this discussion, bating only some indiscretions on the part of two or three gentlemen betraying personality, which ought to be repudiated in a scientific discussion. The bearing of Dr. Horace Green, during the catechetical interruptions to which he was subjected while delivering his address, was creditable to his self-possession, which never forsook him throughout. He was listened to with patience and interest, and impressed all present with his earnestness, and his honest convictions that he is right, professionally and morally, and that posterity will do him justice. Certain it is, that the opposition he has encountered has made his fortune.—*Reese's Medical Gazette.*

An Old Darkey. By A. A. DAVIDSON, M.D.

Prof. W. K. BOWLING : There is now living on the premises of Mr. C. F. Hoard, in Coffee county, Tenn., a negro man 120 years old. By interrogating him I ascertained the following facts, viz : that he was bred, born, and raised in the State of Virginia, and has lived since in North Carolina and South Carolina, Kentucky and Tennessee. "Uncle Pete" says he was in the Revolutionary war, and was well acquainted with Gen. Washington ; also, "Old Ditto," Washington's drummer ; and was intimate with the facts connected with the surrender of Cornwallis, and many other incidents connected with the Revolution. "Uncle Pete" can walk with the aid of a

staff, but steps only about four inches at a time. His nails project from a half to an inch and a quarter beyond the extremities of his toes and fingers, and are curved like the talons of a hawk. His beard is long and white; one eye nearly failed; can distinguish a man ten yards with the other; has three teeth, one superior cuspid, one inferior cuspid, and one incisor; appetite and digestion good; hearing very much impaired; stutters badly in his speech; pulse beats 80 in the sitting posture. "Uncle Pete" formerly belonged to Mr. McGowen, of Coffee county, Tenn.—*Nashville Journal*.

Interesting Case of Fracture of the Coronoid Process of the Ulna. By
JOHN M. PUGH, M.D., &c.

DEAR DOCTOR: I forward you an account of this case for publication, believing it to have sufficient interest to claim the attention of your readers, more especially from the fact, that it is one of exceedingly rare occurrence—some of the ablest and most distinguished practitioners in surgery having stated that they have not met with the same kind of case, more than once or twice during a long and extensive practice. In doing so, I prefer giving the notes taken at the time, by Dr. Hughes, a respectable practitioner of this city, with whom I consulted, and which statement he has been kind enough to furnish me for this purpose.

"Mrs. S., about thirty-five years of age, the wife of a respectable farmer, near Norristown, Pa., while on a visit to this city, fell headlong down a cellar passage, and fractured the coronoid process of the ulna. I was sent for on Friday morning, May 1st, 1855. I arrived at the house about a half hour after the occurrence of the accident. She was much prostrated, and suffering intense pain at the elbow-joint of the left arm. Both bones of the forearm were dislocated backwards, and considerable contusion along the lower surface of the ulna and radius. There being little swelling about the joint I was enabled to ascertain with more accuracy the nature and extent of the injury. At first I thought the case nothing more than a simple luxation, but upon attempting to extend the arm, after reduction (which, by the by, was accomplished with very little difficulty), I was surprised to find the joint gradually displace itself, and assumed the position in which I at first found it. For a time I was puzzled to know

the cause of a result so unnatural to my experience. A second time I reduced it, with a like result, when the arm was extended. A third time it was reduced, flexed, and permitted to remain, until another physician (Dr. Pugh) whom I sent for, had arrived. I intended to repeat the extension in his presence, but the patient was unwilling to have it disturbed, as she suffered much during each previous reduction.

"After consultation with Dr. Pugh, angular pasteboard splints were applied, and the arm put in a sling. The evening of the same day she was obliged to leave the city. I addressed a note to her family physician, in regard to the peculiarity of the case, under whose care she has been doing well, and now uses her arm pretty freely.

"It must be remembered that on each occasion the joint was permitted to displace itself, that the dislocation of both bones backwards was genuine and complete. The olecranon was high up, and projecting, with a hollow on either side of it. The position of the arm was that of a regular dislocation of both bones backwards, viz : slightly flexed, and in the middle state between supuration and pronation. Flexion, I noticed, could not be made, and rotation was difficult and painful. The relative distance between the inner condyle and the olecranon I noticed, which is also a distinctive mark of a dislocated ulna. In fact every evidence was present to justify me in the above assertion that each dislocation was unmistakeable.

"The reason why it is so necessary to be fully impressed with the fact of there having been a dislocation of both bones, at each time the joint was permitted to put itself out of place, is, that the injury might be thought to be an anterior displacement of the upper end of the radius. I thought of this kind of accident at the time, but there was no prominence in the bend of the arm corresponding to the head of the radius, nor a hollow under the end of the outer condyle of the humerus. Besides, these successive displacements upon extension, and the joint remaining in situ naturally when in a state of flexion, are proof it could not be that kind of injury, nor any other than a fracture of the coronoid process."—*Philadelphia Medical and Surgical Journal*.

Vesico-vaginal Fistula, with Laceration of the Anterior Lip of the Cervix Uteri, of nearly Six Years' Standing—Cured in Two Weeks.
By N. BOZEMAN, M.D. (Report read before the Sydenham Medical Society, of Montgomery, Alabama.)

The subject of this case was very kindly sent to my Infirmary, for treatment, by Dr. W. J. Mitchell, of Tuskegee.

Delphia (colored woman), belonging to Dr. Robert Howard, of Macon county, was admitted on the 4th of April, aged 25 ; stout, well formed, and has the appearance of one enjoying good health ; always menstruated regularly, &c. In August, 1849, she gave birth to her second and last child ; has had no control over her urine since ; was in labor nearly four days ; delivery natural ; child of medium size, strong and vigorous ; did well, and is at present a large and healthy boy. Presentation was vertex, so far as can be ascertained. First labor, about a year before, lasted four days—the child was stillborn, and of large size ; delivery natural, recovery speedy, &c. In neither confinement was the patient attended by a physician.

Upon examination, I found the vagina to be very capacious—a circumstance of no little importance, as regards success, in any case, but especially is it so when the fistulous opening is found in close proximity to the cervix uteri. The injury sustained by the parts seemed at first view to be very extensive ; but upon further inspection, they presented a more favorable appearance. In the anterior lip of the cervix, was to be seen a deep cleft, presenting on either side a considerable prominence ; at its anterior extremity was situated the fistula, oval in shape, and large enough to admit the index finger into the bladder. No effort seemed to have been made by nature to repair the cervical injury. In a case* almost identical, which came under my observation last year, a spontaneous cure was found to be perfect,—union seeming to have taken place by the first intention,—only the line of cicatrization remained, showing very plainly the extent of the injury, and its relation to the fistulous opening.

This difference in the results of nature to repair injuries, presenting the same characters, influenced by the same causes, is of no practical importance in the present instance, yet it is a fact none the less interesting.

As to the operation, two modes of procedure very naturally suggested themselves : one, was to close the fistula and afterwards the

* New Orleans Medical and Surgical Journal, May No., 1854]

cleft; the other, was to complete the whole under one operation. The latter, though more difficult of execution, was the one I adopted, for the reason that the patient would not require to be confined so long.

A reparation of the cervix, I did not consider essential to the success of curing the fistula; still I determined to effect it, if possible, in view of the probable results of parturition, should it occur again. With such a deep fissure existing in the anterior lip of the cervix, it can very readily be perceived, how much more liable this point would be to give way under powerful uterine contractions, attended by a reproduction of the fistula, and perhaps laceration of the uterus itself, with all their dreadful consequences, as dribbling of the urine, metritis, peritonitis, &c.

On the eighth day after admission, assisted by Dr. Clanton and Mr. Duncan, a medical student, I proceeded to operate. The method employed, was that of Dr. J. Marion Sims (who, be it to the honor of America, yea, of the world, has accomplished more in this hitherto difficult branch of practice than any surgeon living).

A detailed account of the different steps of the operation, I shall purposely omit, as it would be tedious, and perhaps uninteresting; therefore only a single feature of it will be presented, the application of the suture apparatus. From my description of the injury, it will now be seen that the clamps had to be applied, with all the accuracy observed under ordinary circumstances, to parts totally different in structure and function, with the view of obtaining, by a natural and common process, a natural and common result—union by the first intention.

The dense, strong, and unyielding tissue of the cervix, had to be made to harmonize with the erectile spongy and elastic tissue of the vagina. In lodging the wire sutures in their respective places, great care had to be taken that the needle was entered and brought out at a distance from the fistula and cleft, corresponding to the extent of elasticity or adaptation of the parts. If too far removed, there was danger of the edges becoming everted, and *vice versa*. In neither instance could perfect coaptation be effected—a desideratum indispensable to success. The difficulties and perplexities of such a task, simple as its execution may appear, can scarcely be realized by one who has never attempted it. Having, then, thoroughly freshened and shaped the edges of the injured parts, the first suture was carried through the cervix in its lower third; the second was entered on a line a little exterior to the first, carried across the upper extremity

of the fistula, and out at a corresponding point on the opposite side ; the other two were entered in a similar manner, at equal distances below. To the ends of the sutures, on the right side, a clamp was fixed, and made to take its proper place—the upper end resting against the side of the cervix. The one on the opposite side was arranged in a similar manner, with the proximal ends of the sutures passing through it. Traction being now made upon these ends, the edges of both fistula and cleft were brought in direct apposition. In this relation, they were maintained by compressing a small shot on each suture, close to the clamp ; after which the sutures were cut off close to the shot, and the patient put to bed. The self-retaining catheter was next introduced into the bladder, and the operation then completed.

On the day following, menstruation came on, and soon afterwards I noticed a bloody state of the urine, and slight leakage of the bladder. This condition of things continued four or five days, or until the catamenia ceased, when all unfavorable indications disappeared, and the patient seemed to do well. That a small opening in the bladder existed during this period, to allow of leakage and commingling of the two fluids, there can be no doubt. The most remarkable thing about it, is that it should have closed after so long a time.

The explanation of the result, I think, is this : A small groove remained at the bottom of the cervical cleft, after the application of the clamps, thus admitting a portion of the catamenia to pass along to the upper extremity of the fistula, when it entered the bladder. Owing to the peculiar situation of the opening, and its valve-like form, only a very slight leakage could take place, and this, I imagine, as a result of some effort, or change of position, on the part of the patient. The urine, then, having little or no tendency to escape here, and the edges of the opening being still in a freshened state, union of the parts followed immediately upon the cessation of the catamenial flow.

On the fifteenth day of the operation, I removed the clamps, when union at all points seemed to be perfect. A small notch at the extremity of the anterior lip of the cervix, was the only evidence of the deep cleft which had existed there. The patient was now allowed to get up. At first she could not retain her urine longer than two or three hours, without experiencing some pain in the region of the bladder. This difficulty, however, gradually diminished as the organ regained its natural tone, which it did in a few days.—*Southern Medical and Surgical Journal.*

The Boston Veterinary Institute.

The importance of an institution which should be able to disseminate sound instruction on the subject of veterinary medicine, and supply the community with a class of competent veterinary surgeons, will be at once acknowledged, when it is remembered to how great a degree we are dependent upon domesticated animals for our pleasure, our support, and our wealth. Like the human species, they are subject to a great variety of maladies, which can only be efficiently controlled or relieved by a thorough acquaintance with their anatomy, physiology, pathology, and hygiene, and with the remedies best adapted to the cure of their diseases. The amount of ignorance which prevails, in this country at least, upon the subject, is very great, and yet it is but little appreciated, even by those who are most likely to suffer from it. The most valuable animals, when sick, are frequently confided to the care of horse-doctors and cattle-doctors, who are as ignorant of the principles of veterinary medicine as they are rash and unskilful in its practice. With a few exceptions, this class of practitioners, with us, have had no regular education to qualify them for the exercise of a profession which requires in some respects more knowledge, as well as a higher sagacity, than is called for in the treatment of the human patient; for the physician is deprived of a most important source of information, both in the detection of symptoms, and in the effect of remedies, from the incapacity of the sufferer to describe his own sensations.

Incompetent, as too many of our veterinary surgeons are, we believe that, even in its depressed condition among us, the profession yields a handsome return to those engaged in its practice, and there is no doubt that surgeons, properly qualified by a regular course of study at some institution of known reputation, would find a rich field for the exercise of their art in our community, where valuable animals are often sacrificed, either in consequence of the ignorance of the doctor, or from the skepticism of the owner, who in despair refuses all medical interference. The profession has hitherto been looked upon as rather beneath the notice of an educated and cultivated man, though upon what grounds we are at a loss to conceive. In order to become accomplished in it, one must spend years in patient study, in attendance on lectures and clinical instruction, and in dissection. He should be familiar, to some extent, at least, with all the different branches which are required for the ordinary practitioner of medicine

and surgery ; and an acquaintance with those departments of science which have no immediate bearing upon veterinary medicine, will tend indirectly, by promoting habits of observation and investigation, to qualify him for the study and treatment of the maladies of the brute creation. In England and France there are several schools for instruction in this branch of knowledge, which offer every advantage that can be desired. That at Alfort, near Paris, has long been celebrated. It contains about 300 students, and the course of study, which extends through four years, embraces lectures on anatomy, chemistry, botany, materia medica, and pharmacy, veterinary surgery, with operations, and the practice of medicine as applied to animals. The use of the forge is also taught.

We are glad to see that there is a prospect that this subject will receive among us that attention which it has so long needed. In May last, an act of legislature was passed, incorporating the "Boston Veterinary Institute," the object of which is to afford ample instruction to persons desirous of qualifying themselves for the practice of veterinary medicine and surgery. The plan of instruction includes lectures on the Anatomy and Physiology of the Horse, on Theory and Practice of Veterinary Medicine and Surgery, and on Cattle Pathology. Students will also be allowed to attend the lectures on Chemistry and Pathological Anatomy in the medical department of Harvard University, and Clinical Lectures will be given by the Faculty.

We hope that this effort in behalf of a noble and useful purpose, will meet with a corresponding encouragement from the community. Without assistance at this early period of its organization, the School will not be able to sustain itself. All who own horses or stock, should contribute something towards an enterprise which will be a benefit to them. It is hoped that the next legislature will make the Institution a handsome grant. When money is so freely lavished on botanic colleges and female medical schools, it surely ought not to be withheld from an object whose practical utility will, we presume, be questioned by no one.—*Boston Journal*.

Extraction of a Uterine Pessary from the Bladder. By Dr. UYTTERHOEVEN.

This case occurred in a young woman who, on account of uterine displacement, required the use of a pessary *a tige*. Some time having elapsed after the introduction of the instrument, during which period the patient had neglected to draw and clean it, ulceration took place, and gradually perforated the vesico-vaginal wall. The pessary thus opened a passage for itself, by which its ivory head became introduced within the bladder, whilst the stem, which was of metal, was tightly grasped by the fistulous opening, and remained in the vagina.

The attempts to break the "cuvette," or head of the instrument, having failed, M. Uytterhoeven, after placing the patient under the influence of chloroform, slipped a curved probe-pointed bistoury along its stem, and, guided by the index finger, entered it within the bladder by the morbid opening, which he then largely dilated, and easily withdrew the pessary entire. The subsequent treatment and history of the case offer nothing of particular interest, except that a urinary fistula remained after the operation.—*Gazette Medicale, May, 1855.*

THE PHYSIOLOGICAL ERRORS OF TEETOTALISM.—In a brilliant article with this title in the current number of the *Westminster Review*, we are informed that some years ago the public were told that bread was poisoned with gin, and that in consequence a company was started for the manufacture of a new kind of bread, free from the danger of causing intoxication. For awhile the new company succeeded. But a bold baker opened a shop in opposition, announcing "*Bread with the gin in it*;" whereupon the British public bought his bread largely, and have continued to eat it, with its contained gin, without injury. "We," says the reviewer, "are about to emulate that baker, and meet teetotalism as boldly as he met the anti-gin bakers;" and thereon he proceeds to demolish Dr. Carpenter's work on Total Abstinence, to upset the doctrine that alcohol is a poison and not food, and to prove (which he does to our satisfaction) that alcohol is food, and that use is not the same as abuse.—*Edinburgh Med. Jour.*

PART VI.—EDITORIAL AND MISCELLANEOUS.

In the July number of the MONTHLY we commenced a discussion of some points suggested by the Reports of the Academy's committee. Others were left untouched with the purpose on our part of returning to them. In August this was impracticable, and now, as we consider the position of the Majority, and the verdict which is being rendered against them by the profession, we are almost moved to omit any farther observations upon them. There are, however, other considerations which forbid such a course.

And in the first place we desire to say individually, and on behalf of our associates in this Journal, and of the New York Medical College, that we entirely disclaim any desire to uphold Dr. Green in this discussion simply because he is our friend and colleague. Friendship should do much to induce one to bear faults, but nothing to lead one to support error. Fortunately, in this case it is not called upon to do either the one or the other.

We have several times been pained to hear language used of Dr. Green's colleagues similar to that of Dr. Willard Parker in reference to Dr. Barker, "that he appreciated the difficulty of his position" in this matter. Pained, we say, not because we felt the reproach, but because it shows on the part of these making it that improper motives would have been influential with them. Unjust and ungenerous as it is, however, it permits us to allude to some facts. Prejudices as strong as possible have been felt by almost if not all of Dr. Green's colleagues against him, to the source of which we will not now refer. One formally refused to have anything to do with patients who had consulted Dr. Green; another, when persuaded to visit him, went as one would to see Baron Spolasko; a third, when induced by a common friend to call at Dr. Green's office, was surprised not to see what he had been assured by men of the highest standing was to be seen there, a festoon of tensils, trophies of operations, labelled, one pair Judge ———, another the Rev. Mr. ———, &c., &c. And yet in all these instances a careful and candid observation of the man and of his operations, convinced us of our errors, and left only one course open, to abandon them. It is also just to say, that in all these instances this occurred as the commencement of the subsequent acquaintance, and when nothing could have seemed more improbable than association with him in any capacity. Thus we claim to have been warped in our judgments by no influence whatever, and to have

stood by him because we know the worth of the man, his entire honesty, and the earnest desire that he has for the spread, not of his own ideas and practice because they are *his*, but for the advance of medical truth. Knowing that his researches are advancing medical science, we have not, and we shall not, fail to lend him whatever aid is in our power.

But suppose we turn upon the chairman his phrase, and endeavor to appreciate *his* position ; and what do we find ? A former friend of Dr. Green, at first applauding his advances, then when the current of professional feeling seemed to set against him, abandoning him, denying and ridiculing his operations, denouncing him in public and private as a quack, refusing to meet him in consultation, chagrined at his success and advances in practice, vexed to see him establish himself as the head of a young and vigorous medical school,—all these, with other facts which might be mentioned, seem to accumulate difficulties about his course requiring great diligence and watchfulness to prevent any prejudice from swaying him as chairman of that committee, and compared with which Dr. Barker's difficulties, even if they had existed, would have been nothing.

If then *positions* are to be appreciated in this discussion, we are ready for the issue.

We speak of the chairman because the Report is considered to be his, was probably written by him, and we have the best reason to believe contained in its original draft "pages" of personalities and expressions to which the other members of the committee would not consent. The reasons which we believe may have induced Drs. Stone and Wood to sign the Majority Report, will be sufficiently apparent in the course of this article. Dr. Metcalfe's signature puzzles us, because it was not added till after the Report was read to the Academy ; and we can only account for it on the supposition that his word had been incautiously given that he would do so, and that he felt bound to keep it. True he is a Professor in the University, but we cannot suppose that this influenced him. Dr. Anderson's note adds his signature to the *first* division of the Report of the Majority, which we suppose is equivalent to a statement that he believes that the experiments (all of which he did not see) were correctly reported. Dr. Stevens' report bears on its face evidence of the haste with which it was written, just as he left his house to attend the meeting at which it was read. To call it a part of the Majority Report is erroneous. He was present at two meetings only, namely, those at Dr. Green's office, and his statements are, 1st, "That as regards the question of

the possibility of the introduction of the probang into the trachea, *he did not see enough* to enable him to consider the practicability of such introduction a proved fact." If we read the committee's Minutes correctly, the probang was used but twice at these meetings, and if Dr. Stevens had so long neglected to satisfy himself of the possibility of an operation proposed ten years ago, for which his advanced age furnishes the only explanation, he could not be expected to yield his opinion to two experiments, from their nature necessarily brief, and seen but imperfectly. The *second* statement is that he was confirmed in his previous belief of the practicability of passing a catheter into the trachea, an operation which "admits of no question." His *third* statement is that he twice saw injections thrown through the tube without any "alarming symptoms, or, so far as he knows, dangerous consequences." He then makes some remarks concerning the caution to be used in bringing nitrate of silver in contact with mucous membranes, from which it is evident that he had in mind the crude preparation, dangerous in consequence of its impurities, and the effects of which are widely different from those of the pure crystallized preparation. Dr. Stevens must have been thinking of something else when he wrote that "a stick of caustic weighing only four or five grains may be used daily for months with scarcely a perceptible diminution of its bulk, even in hospital practice." The report, instead of being a part of the Majority Report, is in fact on the other side.

It may be thought that we have given too much weight to the influence of the chairman's opinion, but those who are familiar with the profession of this city will not think so. Dr. Willard Parker has by his knowledge, his position as a teacher, and his cordial manners, gained a place among the first of the profession of the city. In his instructions he is dictatorial, claiming for his assertion an authority all-sufficient for his pupils, and admitting no question. There have therefore grown up about him a generation of physicians accustomed from their pupilage to look to him as the highest reference, and to receive his opinions as a matter of course. Others of riper years, hearing the common expressions of confidence, and knowing his usual accuracy, hold their opinions in vassalage to his, till a large class receive his *dictum* as final. Instances of this are numerous, in our experience, but one afforded by the Minutes of these discussions will suffice. Dr. Detmold, a German physician of standing, and of mature years, said that "the Report has convinced him, that in the many cases where he had used the sponge himself, and seen its use by Dr. Green, that he had been mistaken as to where it went." How

otherwise than that he felt himself borne down by Dr. Parker's authority could he be led to believe that he had not seen and done what he supposed he had many times? Such a sudden somersets of opinion for such a reason, is to us astonishing,—but will make more evident to our readers the influence which the chairman brought to bear on his associates, and the correctness of our previous explanations.

When we use the expression that the chairman “brought to bear” this influence upon his associates, we do not intend to assert that it was done deliberately and with purpose. Nay, we may even allow that it was done almost unconsciously by him, and still was none the less done.

Suppose we now take a bird's eye view of the whole affair, so far as the paper is concerned and its committee. Dr. Green, who, in consequence of his doctrines concerning the treatment of diseases of the air-passages, was requested to withdraw from the Medical and Surgical Society of this city, some ten years ago, persevering in his observations, and making still farther advances, at length presents a statement of his last observations to the Academy of Medicine. In the mean time, from the disputes which occurred in the first named society, bitter feelings had been engendered, till most respectable men were found who could not too much berate Dr. Green, or the practice which he had suggested. The paper read at the Academy contained novel suggestions, proposed novel treatment to diseases notoriously intractable, and recorded a very unusual and marked success. The Academy is struck with surprise, and the members express their delight at this evidence of advance in medical science. Various plans are proposed as appropriate for the disposal of the paper, but none seem satisfactory. Finally a gentleman whose long opposition to Dr. Green has been well known, carried away apparently by the enthusiasm of the Academy, proposes, after some complimentary expressions, that there should be a special committee appointed to consider the matter, of which he of course would be the chairman. The committee meets, examines a few cases, having first established certain rules based on theory not observation, make a very imperfect examination into cases which have confessedly been subjected to the proposed treatment, and then the chairman draws up a report, for which, on the 23d of March, he “was anxious to gather the opinions of his associates (three of them being absent), in order to be aided in making *his* final report,” to use the words of the Secretary. *His* final report was made on the sixth of June, and is signed by just half of the committee beside himself.

It is not strange that with the strong feelings of the chairman, with the knowledge that his opinion had been given, almost his reputation staked against Dr. Green's method of treatment, with the consciousness that by many his authority would be unquestioned, and his positions at once taken as correct, with such an apparent opportunity to crush and remove one whom he so much disliked, it is not strange that he was blinded to the truth, and could not see the fallacies and incompleteness of his own deductions. To our mind no other explanation presents itself, except that when the paper was read a deliberate plan was formed to give an unfavorable report, and to carry the Academy with it,—and we are not yet prepared to say this was so.

On another page we have quoted Dr. Reese's remarks upon the discussion in the Academy. If his connections tend to take him in either direction, it is to Dr. Parker, and there is therefore the more force in what he says of the position of the majority. He quotes Dr. Parker's admission that "the possibility of introducing catheters into the trachea and injecting remedial agents into the bronchial tubes, is now established by the experience of this committee, and that the profession are indebted for this novelty to Dr. Horace Green, whatever may hereafter be its success or failure in practice." We entirely agree with Dr. Reese that "this candid avowal ought to have accompanied the Report in full," but do not see with him how it did "inferentially." It looks at best a little inconsistent with the "conclusions" of the majority. Had it been, or had its spirit been, incorporated in the Majority Report, "it *would* have disarmed the imputation of partisanship and personal hostility," for which that Report gives too much occasion. This avowal was only wrung from the chairman when he found even his authority was not omnipotent with the Academy, and could not induce it to endorse his erroneous, crude, and ill-advised report.

The discussion at the July meeting of the Academy presents some curious features. It would have been better, perhaps, to have allowed still more time to go by, so that *all* the members could have read the reports. In this way offence would have been given to none.

The majority's report fared ill even in the hands of its friends, for though they professed to be convinced by it, they disliked some one thing and some another.

The chairman and Dr. Stone (the only ones of the majority who *attempt* to sustain their report) made admissions as directly tending to destroy that report, as any arguments used by others.

A curious and, we judge by the reports, conceited attempt was made by Dr. McNulty to prove that it was *impossible* to pass an instrument into the trachea. He had made some experiments, and some anatomical investigations, and seems to have thought that no one else ever did. To undertake to lecture the Academy into what they ought to believe concerning the anatomy of these parts, shows a certain amount of coolness and vanity which will not hinder his getting on in the world from want of brass. We have no idea that the reproofs he received will do him any good, richly merited as they were.

Dr. Beadle made some diversion by attempting to prove that Dr. Green had asserted what the record did not show. The title of the paper seems to have misled him. For that title the editor of this Journal is probably responsible, and claims that it is a proper title, and one that he was justified in affixing. But if any blame attaches anywhere for it, he is ready to take it.

Dr. W. Parker appears to have taken offence at some "personalities of the author of the paper." As we printed Dr. Green's remarks just as he read them, we are at a loss to know what is called personality, unless Dr. Parker supposed a phrase quoted from Marshall Hall applied to himself.

The disposal of the paper by the Academy is sufficiently satisfactory to Dr. Green's friends as any other would have been, so long as the Academy did not make it hastily.

ST. LUKE'S HOSPITAL.—The walls of this institution are up, and it is being put under cover of its roof. The work has steadily progressed since the corner stone was laid, and we may hope that it will before long be completed. The Rev. Dr. Muhlenberg was understood to say, at that time, that the chapel and one wing only would first be built, but if so, funds must have flowed in more abundantly, for both wings have been erected. As the editors of the *Nashville Journal* were puzzled by the proportions we some time since gave of the building, we beg leave to remind them that if the chapel is *deeper* the wings are *longer*; and we may also add that the principle of the hospital in making provision for religious instruction of the inmates, is not *new*—would that we could say not *unusual*.

DR. LUTHER V. BELL ON SPIRITUALISM.—In another place we have quoted from the *American Journal of Insanity*, the substance of a paper on “Spiritual phenomena” by this distinguished physician. It was read at the meeting of Superintendents of Insane Hospitals, and was followed by some discussion. A delusion or a belief so widespread as this, and one productive of so much evil, both mental and moral, demands attention. It cannot now be put down by a simple cry of humbug; but good and sufficient reasons must be given for making such a statement. To those especially engaged in the care of mental diseases, such a labor seems peculiarly appropriate, and we therefore hail its commencement. Meantime the profession at large should be kept fully informed of their opinions. We do not either endorse or deny Dr. Bell’s statements. Our observations on the subject have been too limited to do so, and he does not require it. We reprint the article, as we do so many other things, for the information of our readers.

It is not easy to see by what rule of evidence the statements of Dr. Bell that he has seen tables move, and heard raps, and received appropriate answers to difficult questions, can be ignored. We have never seen anything of the kind; but such a fact does not at all invalidate his testimony. Of all the raps we have heard, we have been able to prove their cheat, but that does not show that his were not honestly made.

The whole matter is one of difficulty, and at the same time of moment. When so many believe that they communicate thus with the dead, and are unsettled, if not mentally, yet worse, morally, we should welcome any ray of light that seems to promise relief to those wandering in darkness. The true safeguard against this and similar delusions is to be found in a more careful mental, moral, and religious discipline, and yet we must avail ourselves of every other mode by which the non “spiritualistic” character of these communications can be demonstrated.

HEALTH OF NEW YORK.—So many startling stories concerning the existence of a terrible disease very much resembling, if not in fact, the plague, found their way into the newspapers early in the Summer, that many people feared that this city would be depopulated. Provided, as the metropolis is, with a large number of persons constantly on the watch to detect any and every little unhealthiness, so that the

dear public may spend elsewhere their money devoted to purchasing goods or acquiring the means of education, the shout of *plague* was made to ring long and loud. Would the reader believe that there has rarely been in this city a healthier Summer. People die in every community, and the aggregate of the proportion for a large city seems enormous when it in reality is not so. Cholera and yellow fever, plague and small pox, have none of them been epidemic ; but health has prevailed, to the joy of every class, but to such an extent as to allow physicians leisure to visit Newport and Saratoga without blame from their patients.

It would not, perhaps, be worth while to say much of these facts, but the season is just at hand when traders will be again turning their faces in this direction, and when some other terror may be expected to be found to induce them to purchase elsewhere. The same is true of medical students, and because we know that many anxious inquiries were made concerning these rumors of the Spring, we take the liberty in advance to caution young gentlemen from believing too readily such stories. There are vast opportunities here to see disease, but it is not because there are great epidemics, but because there are so many instances of the common ills of life. The population is, in its lower classes, so situated as to bring together here an unusual proportion of sick, while the munificent charities of the city and of the State assist and alleviate their sufferings, at the same time that they permit them to be made of avail for educational purposes.

It is the case every Spring that young gentlemen arrive here from Philadelphia and other places, and are astonished at what they see. An almost uniform wish is expressed by them that they had sooner known the truth, that they might have governed themselves more wisely, and had the opportunities for which they wished.

TYPHOID FEVER AT THE SOUTH.—This disease, which at one time was almost if not entirely unknown by Southern practitioners, has steadily progressed till now it prevails among their patients. During the month of July, out of 691 deaths in New Orleans, there were 38 from this disease, a little more than half as many as those from cholera, which had just before been epidemic. The expectant mode of treatment seems to be preferred, and to be most successful.

MILITARY SURGERY.—Our readers will be pleased to see that the subject of Military Surgery, hitherto too much neglected, is now about being lectured upon.

The practical advantage to be derived from such a course of instruction, is never more felt than at this critical moment, when nations are at war, and wounded and sick soldiers are dependent upon the aid afforded to them by military surgeons. It is not to be supposed that the student or graduate should find himself ready to do service in the field if not particularly trained for it ; nor can he gain this knowledge to such an extent as is desirable in the short period of his attending the hospitals, which, naturally enough, is taken up by the important miscellaneous diseases commented upon, and leave little time for studying the application of bandages, dressing, etc. We take pleasure in drawing the attention of students and graduates who are desirous of entering the army to the opportunity of attending this course on Military Surgery, which we have reason to believe will be mostly practical. Indeed even civil surgeons will feel interested in a short recapitulation of practical remarks on injuries and the mode of relieving them, as railway and other accidents, not so rare in this time of speedy activity, place the civil surgeon very often in a worse position than the military surgeon himself.

We need no better proof of the necessity of the surgeon's being made familiar with his duties, previous to his entrance in the army, than the constant complaint from the Crimea of the insufficiency and incompetency of the military surgeons. Military medicine ought in fact to be lectured upon as an *extraordinary study* for the advantage of those who contemplate entering the army.

The advantage of having gone through the whole campaign in Hungary, will enable Dr. Glück to illustrate his observations with cases, and allow him to refer to circumstances concerning the patients and surgeons which are likely to occur in the course of a campaign.

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QUARANTINE FOR YELLOW FEVER.—A vigorous discussion is going on at New Orleans concerning the advantages of quarantining vessels from yellow fever ports, in order to exclude the fearful disease from that city. The editors of that excellent journal, the *New Orleans Medical News and Hospital Gazette*, in their last issue, state many

facts which seem to show that it has its origin *de novo* in the city itself, when circumstances favor, and that thus quarantine is absurd. The favoring circumstances seem to be the exposure of an unacclimated, and especially an intemperate, person to the effects of filth decomposing under a hot sun. If this be true, it should be remembered that it does not affect the question in the more northern cities, where this fearful pestilence is not a continuing disease. Its steady advances northward should lead to still greater precautions, and a more rigid quarantine, as, if we mistake not, the history of the Norfolk epidemic will show.

CORRECTION.—The assistant editor of the *Medical Times* of this city, has such a facility in making erroneous statements, that with all our diligence in following them up, he continues well in advance. When nine mistakes can be counted in one page, labor rapidly accumulates for one who would set them right; and the task becomes too great to be undertaken during the Summer heats. However, in the August issue, the editors themselves lend their aid to the work, and we avail ourselves of their assistance by copying the following paragraph, hoping that their *haste* has not been fatiguing.

"*Transactions of the New York State Medical Society*.—In our April No., we stated, that "we learn from good authority, that the paper recently read before this Society, by Dr. H. Green, and which was ordered for publication, has been rejected by the Committee of Publication." This statement was made on the authority of a distinguished member of the State Medical Society, who, meeting us casually in the street, as he was passing through the city, volunteered this information. He stated also, that the committee had notified Dr. Green to this effect. We perceive by the *Transactions*, which have just come to hand, that said paper was nevertheless published. The information coming from so high a source, we considered ourselves justified in its publication, and we hasten to correct the error."

DR. AUSTIN FLINT.—A fine and, we understand, accurate lithographic likeness of this gentleman has been published by the medical profession of Buffalo, on the occasion of his retiring from the editorial tripod (we believe that is the conventional term for that whereon this unfortunate class of men set), and is furnished gratis to subscribers to the medical Journal of that city. As an evidence of fraternal estimation and kindly feeling, it must be gratifying to the Doctor.

THE AMERICAN MEDICAL MONTHLY.

OCTOBER, 1855.

PART I.—ESSAYS, MONOGRAPHS, AND CASES.

A Lecture, introductory to the courses on Physiology and General Pathology, in the New York Medical College, during the Sessions of 1853-4 and 1854-5. By Prof. E. H. PARKER, M.D., &c., &c.

GENTLEMEN: We commence to-day a series of enquiries and investigations in two of the most attractive and interesting branches of medical science.

If we had collected together all the facts concerning the various forms of organized structure with which our world is replete, if we knew precisely what were their relations to each other, and could comprehend all the various alterations constantly taking place, both in the condition of health and in that of disease, weighing accurately the influence of each upon all the rest, we then could construct a complete and exact science concerning life and its various manifestations, which would be satisfying to the most fastidious, and sufficient for the most exact. To such a science we should give the name of Biology, the science of life. This name is now given to the imperfect collection and arrangement of facts tending to, but which is far from having reached this degree of accuracy.

Let us take this for our starting point, that all the objects in the world being divided into two classes, the organized and those which are not organized, the science of Biology is employed in the investigation of the structure, functions, and conditions of all the former class, and investigates all its phenomena, manifested in health or in disease, in the minute cell constituting the perfect plant of the red snow, or the complex and involved structure of man himself. Almost innumerable are the forms of structure in which organization is manifest. Run through if you can in your mind all the forms in which life has manifested itself to you, in all the vegetables about you, and all the animal organizations with which you are familiar, and then recollecting that to no one of you can it have occurred to meet but a very small proportion of those with which creation is stored, you will comprehend something of its immensity. How then shall it be that we shall not be lost entirely in the great field before us?

As in all other of the natural sciences, we divide our investigations into various classes, all tending to the same end, but all seeking it in different ways. Thus we enter upon the study of the structure of man, and animals, and vegetables, and our investigations are properly within the limit of the anatomist. He deals with the perfect, the complete organism, showing the arrangement and relations of the various parts to each other, and the general purpose and use for which each is designed. This is anatomy, and is to be learned only by cutting apart, as its name signifies, that which is complete, and showing how the combination constituting the individual was bound and held together, and was enabled to act, or to exist.

But now if, instead of this, we seek to ascertain how it is that each vegetable or animal seeks from the world around it that which is adapted to its nourishment, how it is that from various sources its nourishment passes to constitute a part and parcel of its own organization, how it is that a mass of matter which can be resolved by the chemist into a few elements, is enabled, under the influence of a certain organization, to increase, to reproduce itself, and more mysterious still, is able to give, in the highest order, evidences of the will of the immaterial something constituting the mind and soul, we appear to

enter upon a new field. Still it is a portion of the same, and we see that it also tends to illustrate the science of life. This constitutes physiology.

The facts from which the science is to be constructed cannot be obtained, as by the anatomist, by the use of the knife. The physiologist has to do mainly with life uninterfered with. Not that he may neglect anatomical enquiry, for, on the contrary, he must be well grounded in that before he thus diverges from its precise limits, but he cannot separate an organ and observe its functions, its mode of development, or its relations to the organs surrounding it. The very act of separation destroys that which he desires to investigate. For this reason the physiologist must seek for the facts of his science, not from his own experiments chiefly, but from those experiments which, so to speak, are furnished for him by the greater prominence given in one or another individual to the very structure whose properties and functions he investigates. This compels him to study in a larger field; to draw his knowledge from more varied sources, and to cultivate a spirit of more general investigation and knowledge. The anatomist may confine himself in his studies to one class of animals, as the horse, or man, and may become, by studying that branch alone, very skilful and learned in his department. But whoever would be learned in human or vegetable physiology, or in any other department of it, must of necessity be acquainted with the whole science, and that not merely in the way of obtaining a slight insight into it, a smattering of it, but thoroughly and completely acquainted with it.

But again, in endeavoring to understand completely the laws and progress of the development of life, one is met by the fact that sooner or later each organism in the vegetable and animal world shows evidence of disease or decay, ending in its destruction. To investigate the causes and the manifestations of this disease and this decay, becomes necessary to a full understanding of life, and in entering upon this, one treads a different portion of the field which we have contemplated. This constitutes in fact pathology, and requires a more or less complete knowledge of the portions of which we have before spoken, in order that it may be pursued with the most profit. All three still constitute but one whole, and are necessary to the perfectness

of it, and Biology, as a science, cannot be complete if either of these three is wanting.

Or we may look at the relations of these branches of medical knowledge synthetically, and say that one may commence his acquaintance with organized structures, by studying their construction, by examining what is visible to him of the relations of various parts, by separating those parts carefully from each other, that is, he may study the *anatomy* of the object submitted to him. He may then proceed, having learned that there are certain organs, to investigate the functions of each, removing obscurity by extending the field of his investigations to other classes, and thus gaining additional information upon the subject before him. Thus he learns what is its *physiology*. Then he may enquire into those causes which tend to destroy, and sooner or later do destroy its organization, learning of its diseases and decay, and here he touches upon *pathology*, while all along he has been studying the various manifestations of life, and becoming acquainted with its curious and wonderful workings, and therefore while his pursuits have been much varied, they have tended still to instruct him in *Biology*.

It seems to me that it is not simply a matter of curiosity thus to define the relations of these various branches to each other, but a matter of absolute necessity. For the want of this, it has sometimes occurred that in the multiplicity of sciences confusion has resulted, and much valuable time has been lost by the student in endeavoring to carry on some of the more advanced of these, as pathology, without comprehending the important connection of the others as preliminary to it. Just as we have seen strangers striving to save time by some apparent short cut, which leads them to confusion, rather than patiently walk along a dusty road, in which every step gives them real advance, because it looks long and wearisome. There are no short ways to knowledge, and the wise man is content to plod.

It may not be improper to pause here to say that this idea is important, not only with regard to those branches of medical science of which we have spoken, but of all the departments together. Thus we may say of the usual curriculum of studies taught in schools, or in the office, that the beginner should first turn his attention to anatomy, chemistry, physiology, and mate-

ria medica, and not till he is acquainted with these, should he pursue his enquiries in therapeutics, pathology, surgery, obstetrics, the practice of medicine, and medical jurisprudence.

I know this has not been the way in which instruction has been and still is frequently given. Too often in the office, and there more frequently than in the school, has the student been first supplied with some work on the practice of medicine, or surgery, and after a time been shown a patient who has a fever or a tumor, and been told that for this fever or that tumor such remedies or such an operation is desirable. And in due time the young man learns to think that if a person is pronounced to have a fever, he understands his disease perfectly, and as a matter of course gives certain remedies, for they are good for fever. He is satisfied, and perhaps his patient recovers. But it is this mode of instruction which begets routine practitioners, a highly dangerous class to the community. And I here, at the commencement, make this digression, that if there is any one of you who has been unfortunate enough to have fallen into similar habits, he may at once begin to set himself right in his course. It will simplify mysteries, and it will make molehills of mountains. But let us return from our digression.

I have before stated the self-evident proposition that all the objects in the material world are divided into two great classes, the organized and the non-organized—a proposition so entirely an axiom that it cannot be doubted. Physiology then, we may say, is that science which has for its object the investigation of the actions and functions of all living beings that come within the range of our knowledge. It is clearly a science having a vast range, but as it is pursued one is astonished and delighted to perceive the light which is received from sources apparently the most incongruous and entirely unexpected. The definition given, it will be remarked, excludes much that in the ordinary use of the word is included in the science. Thus it has to do with the *actions* and *functions*. This excludes of course, strictly speaking, the study of the structure of living beings,—not that it is not of the highest importance to the physiologist to be acquainted with their structure. Properly speaking, that knowledge is a *pre-requisite* to this science. Still physiology has of late years, in its rapid progress, gone almost hand in hand with

the study of the tissues, called in medical nomenclature histology, and some confusion has arisen from their thus having been taught together. Though we shall constantly refer to histological discoveries, and have very much to do with them, still it seems to me that the division now made in the curriculum of studies of this school, is the only correct one. Histology is attached to the chair of anatomy, and is as properly a portion of that branch of our science as osteology. It is the anatomy of the tissues, as strictly as osteology is of the bones, and though perhaps a larger portion of its progress has been made by the use of the microscope, it does not at all affect the argument. Please remember, then, that though we shall have very much to do with histology, it is not, strictly speaking, a part of physiology.

But the science which investigates the whole field now opened before us, is divided in various ways in order that it may be more easily examined, and the facts discovered be more properly classified. Thus the investigation of those functions, as aëration, which concern the whole class of living beings, constitutes *general* physiology; while that which investigates the peculiar actions and functions of any particular series or division of living beings, is *special* physiology. Under the general head of special physiology we may range the following subdivisions, not as parts of special physiology, but as instances of it,—thus *vegetable* physiology is that which examines into the physiology of all plants, from the least to the greatest; while *animal* physiology equally concerns itself with the whole range of animal life. Of this latter class *human* physiology is clearly a subdivision, though to us as students of medical science it is the important portion, the *gist* of the whole matter. So, too, when the results obtained in different departments are brought together and compared, especially for the purpose of throwing light on obscurities, the special name assigned is, comparative physiology. Each of the special departments is capable of still farther subdivisions, and as we proceed we shall meet them, but here it is not necessary to dwell on them.

Pathology is divided in much the same way, and for the same reasons. Pathology is the science of disease, and it is the business of the pathologist to study into all the changes which dis-

ease produces, whether in the tissues or in the functions of the individual. It is a mistake often made to suppose that he is chiefly concerned with the evidences of disease, which are manifested by the alterations in the tissues, either during life or after death. Pathology has to do with these; but there are very many other things of equal importance to its prosecution. Thus, it is necessary to study all the causes of disease, not only within, but without the individual; not only as derived from others by descent or communication, but those which come from the atmosphere, or climate, or exposure, or heat, or cold, or from the thousand and one things that surround us. It is occupied in discriminating disease; in foreseeing its termination in health or in death, and in determining what class of influences must be brought to bear in order to hasten the one or ward off the other.

Pathology may be divided, like physiology, into general and special—the former having to do with diseases in general, while of the latter there may be as many divisions as one chooses to make. These divisions may be founded either upon the disease, or upon the organ or tissue diseased; and for this reason we find so many divisions made by various authors. Of general pathology, too, there are numerous subdivisions, to some of which allusion has been made, and the most prominent of which are, in medical nomenclature, nosology, ætiology, semeiology, diagnosis and prognosis; and to each of these, hereafter, some time must be devoted. With the anatomy of diseased tissues we shall also be occupied; but I beg of you to divest yourselves of the idea—if unfortunately it has taken possession of you—that this is pathology itself. This is pathological anatomy, and stands much in the same relation to pathology that general anatomy does to physiology. I do not desire to depreciate this study; it is highly important, but I wish simply to enforce the fact that pathology is more extensive, and much more general in its range and investigations.

It will readily appear, to any one who stops to think, how essential these two branches are to the practitioner of medicine. The various branches, which together constitute medical science, have for their ultimate end the preservation of the human race from disease and its effects. These two sciences—

the one the foundation of the other—lie at the very bottom of our investigations. Before we learn to ward off disease, we must learn what is the condition of health which we desire to preserve. This physiology teaches. The means by which, and the mode in which we are to preserve our bodies in this condition of health are properly within the sphere of hygiene. The two go together, and hygiene is the practical application of the teachings of physiology. In these practical times, it is often considered *more* important; but it should be remembered that it owes all it has of value to physiology, and that without it, it is nothing: so rational medicine owes very much to pathology. It is this alone which gives any light to the student, save what is derived from the merest empiricism, using the word in its legitimate, not its artificial sense. For what but this showing what disease consists in, and what is *desirable* to remove it, can give certain indications for its treatment? Without this clearly, the use of one remedy or another, the simplest or the most complicated, must be merely a trial, an experiment, in which the chances of a favorable or unfavorable result are about equal. Therapeutics, then, is not at all a portion of pathology, though it has frequently been so classified. The relations of the two may be thus expressed: Pathology teaches that from certain appearances, which we may call symptoms, we are authorized to say that certain changes are, or have been taking place in the system; and that in order to remove this evil, or to restore the natural condition of the organs or tissues, something is necessary which will produce certain effects; but pathology is not concerned to say what that something is. Therapeutics must say whether or not that something is known, and if known, must draw on its armamentaria of the materia medica for it. Or if pathology declares itself unable to point out how the disease could be cured, or if therapeutics is unable to say what will cure it, it only remains for the surgeon's knife to remove it, or for the confession to be made that it is beyond the reach of the science of medicine. This, then, is the relation of these four branches of our science. Human physiology investigates the system of man, and learns what is the condition of health, while hygiene is occupied in examining into all those influences which disturb this state.

and endeavors to find some way of removing them. Pathology points out the causes, the signs, and the effects of disease, and gives a general intimation, or indication, as to the mode in which the disease can be removed ; while therapeutics decides whether or not there is any mode known by which the indication of pathology can be accomplished. You see, then, how admirably all the various branches of our science fit into each other, aid each other in accomplishing the same great end, and still how distinct and separate they, in fact, are.

To my mind, a clear and distinct appreciation of this union, and of this independence, is highly necessary to the most successful prosecution of medical science. And there is the more need of distinct limitation of the sphere and purposes of pathology from the very great burden of sophistry and obscurity which it has been compelled to bear. The time has been when either medicine ran away with pathology, or pathology with medicine ; or when both together have wandered off into those misty regions of assumption and hypothesis, which have at one time or another been detrimental to almost every one of the natural sciences. Humoralism and solidism are two of the many extremes into which, at one time or another, theory has led physicians ;—not that theory is necessarily an evil—very often it is useful and is a matter of necessity ; but when separated entirely from the inductive teaching of the Baconian method, when starting only from the imagination of some ingenious philosopher, it dwells on subjects of which it is ignorant, and uses for proofs its own assertions unsustained by any evidence, it is entirely and only injurious. Facts are what we need, and truth is the object of our search. But it is real facts and truth, not its semblance, that we must obtain. The various sources of error in both of these we shall have occasion to refer to as we proceed in our course ; but throughout it must be remembered that there are alleged facts which are only assertions or mistakes ; and there are doctrines still taught for truth which contain but very little of that eminently desirable element.

From the field thus opened to us, from the general survey we have taken of the studies before us, was I not justified in saying that the branches which we are to pursue together are

among the most interesting and attractive of all those which, in their combination, constitute medical science? I know that every one is a little inclined to "magnify his office," and to suppose that the particular pursuit in which he is engaged is of more importance than all others. But it is not this view of the subject which I wish to take. The cry very often comes to the physiologist and to the pathologist, what is the use of your straining your eye peering at some minute particle of matter through your microscope? or why do you waste your time investigating the relations of health and disease in their various effects, visible only after diligent search and the most cautious examinations? Give us something tangible; give us something practical. Ah, gentlemen, that word practical has done much mischief in the world. No one would be ready to devote himself sooner than I to the really practical, and to seek to gain that which shall be useful. But practical too often means that something is desired which shall, in five minutes or five days, be sure to put money in one's pocket, or immediately give some evidence that it is improving our science in that which is its great end—the cure of disease. But empiricism, trial, experiment, has accomplished almost all that it can; and now patient and diligent observation are necessary in order to ensure accuracy. I have known one to peer through a small microscope at some tissue hastily spread out, and, seeing with more enthusiasm than judgment, he has hastily announced his discoveries, contradicting, sometimes with positiveness entirely unsurpassable, the statements of diligent and patient investigators. Here was your practical man. He never looked but to see something new, and something which tended frequently to show how erroneous were ordinary modes of proceeding and treatment. But, alas! his discoveries were evanescent, ever succeeded by something novel, never enduring the slightest test. The careful chemist knows very well this source of error; and before he commits himself as having made any discovery, repeats his investigations very many times, striving at each to guard against all possible sources of fallacy; and it is only when he has at last succeeded in showing that there is no possibility of error that his observations are announced. Such should be the mode adopted by the physiologist, and especially

when pursuing his inquiries in microscopical matters. There is so much need of care, so many possibilities of error, so much that may be supposed to be seen when it is only the error of an uneducated observer, that too much caution cannot be used in verifying all that is apparently new and important. For this reason, our best observers are slow in bringing the results of their observations before the profession. They appear to be expending months and years on matters of slight importance, or, at best, of curiosity only.

But the fact is, so many errors have cumbered, or have been alleged to cumber the science of medicine, that it has been necessary to re-examine its foundations and detect all possible sources of mistake. Sometimes a clue is obtained to errors, and to follow them out requires very long inquiry, and a patience which would unravel the mysteries of the labyrinth. But the one engaged in such pursuits may, even after years of investigation, bring forward facts which shall compel the *practical* man, who has been so profuse with his sneers, to abandon entirely his whole mode of treatment, may point out to him errors which he never could have seen himself, and entirely overwhelm him with the brilliancy of his discoveries. I beg of you to be *practical*; but I also beg of you not to be *only* practical.

It may not be inappropriate here to dwell for a short time upon some of the improvements which physiologists have made in medical science. To do this fully, it would be necessary to go through the whole history of the advance of the science, from its comparatively recent origin to the present time; and to show how at each step it has made some correction in the opinions or practice of medical men, which, though afterwards to be still farther corrected, was, at the time, a real and substantial progress. To follow up the successive improvements and obligations, under which physiology has thus placed our science, would be in the highest degree interesting; but this pertains more to the history of medicine than to our immediate department, and requires more time than I find myself at liberty to devote to it. In a general way, we may point to these improvements.

Before the rise of physiology, it was the custom with medical

men to look only at disease in the aggregate—as a mass of symptoms indicative of great derangement in the integrity of the tissues and functions of the system, and as completed, or at any rate, far advanced, not as incipient or commencing. Thus, the quick pulse, the hectic cheek, and the glassy brilliancy of the eye, would indicate then, as now, an advanced condition of tuberculosis pulmonic, abdominal or other ; but it was not then known that the first origin, the first fanning of an hereditary propensity to it, was from a general depravation and impoverishment of the system, and thus that conversely, when such a propensity was known to exist, it was to be guarded against by early and continued efforts to avoid all exhausting and depressing influences.

Again in the knowledge and treatment of diabetes mellitus, great changes and improvements have been made, though we are still unable to reckon it among the curable diseases. But it is only a few years since all that was known of the disease could be summed up, by saying that persons first showed indications of the disease by the inordinate quantities of urine discharged each day ;—and that this urine, more or less loaded with sugar, continued to increase in quantity—the strength of the patient disappearing, notwithstanding his appetite was good, or the quantity of food ingested was large, his flesh wasting away, till at length the flame, which had long flickered, suddenly went out. Pathological anatomy could detect no alteration in the kidney or other tissue, and the disease was among the profound mysteries of the science. But physiology showed that the function of the kidneys is not to create the urine from the fluids furnished to it, but to separate certain ingredients from those fluids. With this suggestion, the chemist sought for sugar in the blood, and, detecting it readily, the inquiry next arose, how does it come in the blood ? But do you not see that this is an advance apparently theoretical, or rather in the theory of the disease ? Still, it is an eminently *practical* advance ; for, instead of teaching that the kidney is diseased in some way or other, and thus leading practitioners to address their remedies, whether alteratives or counter-irritants, to the kidneys, physiology has shown that the kidneys are in their normal state, or rather are performing

their normal function. The pathologist then must look for the disease elsewhere, and the practitioner must apply his remedies elsewhere. Still, chemistry might have detected the sugar in the blood as well as in the urine, and pathology might have declared that there is no apparent disease in the kidney ; and the practitioner might have said that his remedies did no good ; but till physiology could declare that the kidney performed its proper function, neither of the others could escape the conclusion drawn, that the chief symptom of the disease comes from the kidney ; and therefore it is the kidney that is diseased. I do not say that the cloud is cleared away ; it is not by any means : still a step forward was thus taken, and the physiologist was the safe guide that authorized it ; and if I am not much mistaken Claude Bernard, in the investigations which he is now making on this subject—and to which I shall hereafter refer—will again teach the medical world the value of physiological studies.

So also the study of the blood, or the physiology of the blood, has led to some most important results. Thus, of its various constituents, fibrine has been long recognized and acknowledged as important. Now, the physiologist, in his various experiments, has found that mercury has the effect to diminish materially the amount of fibrine in the blood, or at any rate to diminish its firmness. This observation at once threw light upon the use of the mercurials. These much-abused, but excellent remedies, sheltered under the indefinite title of alteratives, had often been used empirically when it was doubtful what had better be selected as the remedy for the patient. Sometimes they did good ; sometimes they did harm. But now the mercurials are used as alteratives in those diseases in which it is found that there is too much fibrine developed, or where it is poured out upon surfaces or in cavities, and threatens to interfere materially with the functions of any organ.

What, too, but the investigations concerning the blood, instituted and urged on by physiology, could have revealed to us the disease recently recognized under the name of "leucocythæmia," and which has for its characteristic a great preponderance of the white corpuscles of the blood.

Or we may point to the immense improvement in the treatment of diseases of the nervous system, as a proof of the benefits derived from a study of the physiological system—whether it be to cure diseases before incurable, or to discard an operation which was frequently performed to relieve *tic douloureux*, by dividing a nerve which did not convey sensations from the part.

These are but a very few instances to which I have alluded : but we could easily multiply them, though to trace them out fully would, as I have said, occupy too much time.

I do not claim everything for physiology ; but I do claim for it a very important place in the various branches of medicine, which are now together carrying forward our science to more and more advancement and success, and which are constantly improving our means and our ways of curing disease.

The general arrangement of the course of lectures in this department will be the following : First, to establish the principles of general physiology, that which pertains to the functions of all organized beings ; then, passing by much which is interesting in vegetable physiology, to go at once to the consideration of animal physiology, in which will be included the study of the functions which pertain to animals in general ; after which we must pass at once to human physiology, to which much more time must be devoted, as being that chiefly important to us as students of medicine—desiring chiefly to investigate the human system in health, that we may be able to say when, by any departure from it, disease arises.

I propose then to turn to pathology, that is having studied the phenomena of health, we will then enquire into those of disease, being prepared to appreciate them better. Here, too, we must first consider *general* pathology, and this we shall dwell upon longer than upon general physiology. The reason is obvious, because the latter including much that is derived from lower organizations, may be dispensed with, when we are principally concerned with human life ; but the former, which is properly speaking, general *human* pathology cannot be dispensed with in any respect when our end is the same, for it is but another name for the general investigation of the diseases of man. Thus we shall study the principles which apply to

all diseases in general, and the principles which seem to direct in the progress of particular disease. But it will not be possible to follow out in each organ the whole series and succession of changes, which each disease produces. Thus we may consider the general principles which regulate the development of cancer, but it will not be possible for us to follow out the precise mode of its development in each organ or tissue.

You see then that we have an abundance to occupy our portion of the time of this session, fully and completely ; this I hope we shall do, not only with interest but profit. But, gentlemen, there is one thing which it is of the utmost importance to you to bear in mind, namely, that it is for you to do the work from which you can derive any profit. It will not suffice for you simply to present yourselves in this room, and to hear what is said. You are to study and to think. Cogitate for yourselves, and lay up those principles which are of value, not because I or any one else says they are true, not because you are *convinced* that they are true. In this respect many commit an error, when they undertake to obtain an education, and especially in the study of medicine, where so much is done by oral instruction. There is comparatively little danger of this error, when all the sources of information are books, from which the knowledge must be obtained by a careful perusal and study of them. The very fact of the eye being compelled to pass over each word and the mind to comprehend its meaning, tends to, though it does not always succeed in preventing, superficial acquaintance with the subject studied. On the other hand, where all that is required of the body is to be present in the lecture-room, the mind may wander into regions far from scientific, and to subjects pertaining to anything but medicine, so that only the heads of the topics are retained in the memory, if fortunately even they make a lodgment. Still all about, having heard differently, are perhaps speaking of the topics discussed, and to appear not to understand them, would show at once the error committed, so that vagueness is resorted to, to hide the disagreeable fact of ignorance. A repetition of the same mode settles the habit definitely, and when once settled, its removal is almost impracticable. This I say is an especial danger in the method which is necessarily adopted of teaching medicine.

chiefly by lectures. And this is a danger to which all of you are exposed, but to which I trust no one of you will fall a victim. There is a process in teaching, which is called in the English universities *cramming*, by which it is undertaken to supply within a fixed time, a certain amount of information to the mind of the pupil. The same word is applied in some rural districts to a process, by which fowls intended for market in a certain period, are made to fatten very rapidly. I confess, that for all useful purposes, for all that is really valuable, the biped that bears the feathers is by far the most fortunate. The purpose of education is more correctly expressed by its derivation from the latin, than by the process usually understood to be gone through. It is to draw out, to lead out the mind, so that all its powers shall in their relations, each to each, possess the greatest fitness, and the individual thus be best prepared to avail himself of all the mental ability with which he has been endowed. This process does not at all pretend to store the mind with everything that it shall need in coming time, but to fit it to acquire what it shall need for itself. It was one furnished in his mental stores by the cramming method to whom Dr. Rush (I think it was), administered the well-known rebuke: "I have recently finished my studies, sir." "Finished your studies, young man, I have but begun mine." A degree, whether academical or professional, is but an expression of a certain amount of progress limited, but sufficient to enable its possessor to go on farther in the course which he has commenced. A recent writer in a British medical journal, in speaking of this subject, expresses the truth very simply and forcibly, thus: "a professor wastes the time of himself and his class, if he tries by details to save the pupil's personal labor. Private study alone can give them this knowledge." Gentlemen, I do not propose to deal thus unfairly with you or myself, but to adopt such a course as will be for your real benefit, and such as you will hereafter see, if you do not know to be for your highest interest. It is not at all my purpose to dwell with you upon every point or topic, which has been taught under the name of physiology, or to discuss with you all the minutiae of the topics which are from time to time mooted, or to attempt to teach either physiology or pathology as a perfect

science. Certain principles in each are fixed and established, and these I shall endeavor to make clear to you. Others are fast approaching a solution, and to put you in possession of the facts already ascertained, and the direction and results to which they appear to point, qualifying you yourselves to act as judges, is all that any one can accomplish.

It has always been the case in every period and region of great activity and vigor of vegetable life, that with much that is useful and healthful, there also springs up much that is useless or poisonous. He is the best botanist, the most useful man, who going among these various growths, decides upon their qualities, not by experiments in his own person, but by means of the thoroughly established principles of botany, who can point out almost with certainty, the properties of each from its most prominent peculiarities. So in every time of intellectual vigor, when every science is pushing itself forward with unusual activity, very many weeds spring up. Half observed facts and crude theories are hastily sent out, cumbering the ground and poisoning the mind that attempts to feed on them. The acquisition of the power to discriminate between the good and the bad, is that to which I invite you, and if each aids it will be accomplished for all, but into no one can this be forced. I cannot more briefly or more forcibly impress upon you the thoughts which I have thus dwelt upon, than in the words which old Polonius addressed to his son :

To thine ownself be true.

There are one or two other topics upon which I find myself stirred to speak to you, though they do not especially pertain to this chair, but to which I fear I shall not again find so fitting an opportunity to refer. As we have thus far been somewhat digressive, it will not be doing much violence if we continue to be a little farther.

From the moment that one commences the study of our profession, his character and reputation begin to be a part and parcel of the reputation which is the common property of us all. To the degree of standing to which he has advanced is directly proportioned the degree of injury that he can inflict upon the whole. Remembering this, I wish to give you two pieces of advice, not that my age particularly authorizes me to

speaking as a *pater familias*, but because from some observations I know that these evils are not imaginary or of slight importance.

And, first, beware of quackery in all its forms, in all its shapes, in all its allurements, and in all its temptations. Keep yourselves clear of the vile contamination. I am persuaded that very much of this rampant evil has its rise long before the graduating degree is conferred. One at first sees only the attractions, the gilded charms of this seducer, and in utter ignorance of the foul contamination of her character, listens to the inducements she holds out. It is not usually the case that a student gives himself to quackery while pursuing the study of medicine, but I have known it to be done when the strongest guards have been put about him, and the strongest promises given that it should be abstained from. This evil has however increased within a few years, and it has repeatedly been the case of late that the ill-worn disguise has been dropped as soon as a degree has been conferred. Clearly this is the result of an almost constant duplicity and deceit, and it hardly could have resulted if the neophyte had been duly warned of the dangerous web that was forming about him. The first starting point being granted, the process by which the snare is completed goes on steadily and constantly unless some great effort is made to destroy it?

There are two or three precautions to be taken at the outset if one would avoid this evil. One is ever to preserve the high sense of honor which would forbid any departure from the course which alone brings credit to that profession to which each member of it owes so much. Our science is the result of no one man's labor, but of that of whole generations of men, each striving earnestly, if not always wisely, to advance it, and to set still farther forward in the regions of ignorance the outposts of knowledge. But pretenders to knowledge which they have not possessed have ever been its opprobrium, and have ever been a bye-word and disgrace to it. So, too, have those been who have sought it only for its profit—reaping where they have not sowed. Undoubtedly we should expect profit from it, but when man looks to any science only for its golden rewards, he ceases to honor the science or to be its devotee, but

worships only the god mammon. Each one of us owes our noble science a debt which, as honorable men, we cannot refuse to pay, or refusing which we show ourselves only bankrupt of principle.

But principle more than honor must be our second security against this evil. It does require some principle to refuse to be enticed to some path in which you may, by a little exaggeration or a little prevarication, reap golden harvests. It is only when one has felt the stern hand of poverty upon him, when he sees those he loves in want of many things which not only would grace them, and make their lives more delightful, but are almost necessities to their comfort, while his less scrupulous neighbor rolls in riches and enjoys every luxury, it is only then that one understands the trial to which principle can bind him. But with all this trial there is such comfort, such exquisite delight in the remembrance of duty well performed, that he who has tasted it would not exchange it for all the wealth of Golconda, or Peru, or Australia—or for all combined. And still to many such men can I to-day point undistinguished to the cold eye of the world, but well understood and clearly recognized by that Eye which never passes by one who nobly struggles against temptation.

If you ask me for the noblest characteristic of medical men, I know none higher than this. And still the unwitting world asks why, if one wishes for an infinitesimal of an atom, and will trust his chance of life to that; or for water only, as his medicament; or for the crudities of the botanic, why are you not content to let him have them? He takes the responsibility. It is himself alone that can be blamed. No; this is not so. Can I, without fault, stand near a drowning man and try to make a rope of sand because he prefers to be saved by it, and takes the responsibility of his own safety, when I know that a good honest hempen rope will be sure to bring him safely to land; or shall I waste my time in a rough sea trying to launch a birch canoe, in which my greatest exertion only enables me to keep my balance, if even that, when the life-boat hangs at the davits thoroughly manned and safe against any emergency? What though the green landsman thinks a canoe a great deal prettier than a stout boat, shall the sailor permit him to sink

because he is ignorant? No! we must be honest, and if even our friends shall think us absurdly particular, scrupulous beyond measure, let us preserve to ourselves the "*mens sibi conscia recti*." Then tamper not with this bold-faced harlot, in whatever disguise, or however supported she may come to you. To hesitate is to risk the greatest danger, and when you least anticipate such an event you will find your bones and marrow eaten up, destroyed, and testifying against you. Avoid it now, and avoid it always.

One thing more and I have done. In all those departments of our science which in their investigations press farther and farther back to the intimate structure and hidden mysteries of nature, there is ever sought the cause of what we see. By still prying into the hidden secrets we have advanced farther than those who have preceded us, till now our feet stand firm where all to them was thick darkness. From this enquiry as to the cause of everything, and from the sometimes audible answer that it is this or that, there has arisen a tendency, though slight, to a gross materialism. Medical men, as well as other students of nature, have sometimes placed the extreme cause in what is seen, forgetting the great "beginning, means, and end of all things—God." I do not think the charge of infidelity against medical men has been fairly made, especially if we bear in mind the tenets and belief of other classes of educated persons who were cotemporaneous with them. I am sure that such a charge made at the present day, and it is not often heard, could not be supported by facts. Certainly it could not concerning the profession, I mean excluding charlatans and pretenders, in this country. But I think I have observed among those just *entering* upon their studies an inclination, though it is usually transient, to something of materialism. It is not at all unnatural. In pursuing our studies we find our view extending so much farther than we had anticipated, and so much more exact in all its minutiae, that we at first suppose we see everything. In tracing back the causes we come to the last which is within our reach, and forgetting that, we look out into the darkness, we say there is nothing beyond. Still when we have traced back the origin of whatever cell or form of life to its remotest cause, *The Cause* remains, above all and in all.

I do not come here to preach to you, but I wish to suggest to you this source of danger. I shall not hesitate when occasion seems to require it, to refer to the God and Father of us all, as the great cause of all those curious adaptations and disguises with which we shall find our topics replete. I here speak of the danger, so that if any one, from youthful ardor, or impetuousness, or pride of intellect, or any other cause, inclines to wander to the dark and dismal field of skepticism and cold unbelief, he may be warned, that he may not misread the lessons of our science, and that he may not anticipate any aid or comfort from me. If the unbelieving astronomer is mad, much more is the unbelieving physician, and for him there is but one healing draught, that of the crystal waters of the river of life. With fewer words upon this subject I should have done injustice to myself—with more I fear I shall seem to doubt you.

Prosecution for Malpractice, in a case of imperfect recovery from a Dislocation of the Elbow. *Farr vs. Moore*, Grafton county, New Hampshire. The case was tried at the April Term, 1853, before Mr. Justice Woods. H. & G. A. Bingham for plaintiff, C. W. Rand and H. A. Bellows for defendant.

On the 17th day of September, 1850, the plaintiff, a boy nine years old, was running and fell, dislocating the forearm backwards.

Dr. Adams Moore, of Littleton, who lived at the village, nine miles from the patient's home, was called, and arrived about three hours after the injury happened.

He found the joint much swollen and very painful. The arm was easily drawn into place with a slight chuck. On flexing the arm the boy complained very much.

The case was regarded and treated as a simple backward dislocation, with more than ordinary swelling and pain. The swelling and extreme sensitiveness of the boy, and his absolute refusal to inhale chloroform, prevented a minute examination.

The boy was born of a scrofulous mother, whose lungs and

general health had been impaired before his birth, and who died of cancer of the breast. He had a cleft palate ; bore the aspect of a strongly marked scrofulous constitution ; and did not manifest the ordinary degree of mental development of boys of his age.

He was lying on a bed when the dislocation was reduced, and was left there with the arm in a semiflexed position, resting on a pillow, covered with a napkin saturated with cold water. The use of bandages, splint and sling, was considered improper. The application of cold water, with entire rest, was directed. The father was also told not to move the joint for eight or ten days, and then to begin motion without any efforts of the boy.

No request was made to the surgeon to visit the boy again, the surgeon saying it did not appear necessary. The father undertook the care of it himself.

The following night the limb continued to swell, and was quite painful, although the boy took morphine.

In the forenoon of the next day, the father applied to Dr. Burns, of Littleton, the senior physician of that region, who visited the boy with Dr. Moore.

After hearing a history of the case from the friends and Dr. Moore, and examining it as far as he thought proper, he gave it as his opinion that there was no appearance of any existing displacement of the bones ; and advised a continuance of the treatment first prescribed, until the inflammation and swelling should subside ; and if then all did not appear right, to bring the boy down to the village for further examination.

No more was heard from the boy until the seventeenth day after the injury. At that time the father took the boy to Dr. Burns for examination. Dr. Burns looked at it, told the father to ask Dr. Moore to come to his office, at the same time saying that the arm was not right, which observation was reported to Dr. Moore at the time.

He went to Dr. Burns' office, and found the arm capable of only partial flexion and extension. The covering of the joint was thickened and indurated all around. The prone and supine motions of the forearm were perfect ; and no displacement of any bone could be discovered by Dr. Moore. As Dr. Burns

had expressed an opinion conveying the idea that the dislocation had not been perfectly reduced, he was specially requested by Dr. Moore to point out wherein there was any bone in a wrong position. He examined it thoroughly and admitted that he could not discover any displacement. Friction, flexion, and extension of the arm, as forcibly as the boy could bear, were advised.

About three weeks after, the father again brought the boy to Dr. Burns, who sent for Dr. Moore.

No material change had taken place, except the abatement of soreness. The motion of the joint, and the thickening of the integuments, were much as before. The sorest part was in the bend of the arm over the coronoid process, and there the thickening of the parts was the greatest. There was clearly some deep injury. It was proposed to administer chloroform to the boy and make a more thorough examination, which was done next day at the home of the boy. Extension, flexion, and a thorough manipulation for a considerable time were made, but no displacement could be discovered. An internal lateral displacement of the ulna had been suspected by Dr. Moore, who at this time became satisfied that it did not exist. A fracture of the coronoid process was supposed to be possible, but the rigid state of the parts prevented any satisfactory conclusion. Nothing new was advised, but to continue the treatment last recommended. The father had become dissatisfied, and was talking about his right to damages. About six months after the injury, the boy was presented to Dr. Dixie Crosby, Professor of Surgery in Dartmouth College, who was then at a railroad depot, waiting the arrival of the train, and had not time for a deliberate examination. He made an examination, and suggested that the ulna might be displaced inwardly ; and soon found from the father that he was after an opinion for the purpose of sustaining a suit. He told him decidedly that he had no reasonable ground for such a claim.

On reaching home, Dr. Crosby wrote to Dr. Moore, stating what had transpired, and advising a careful examination in relation to an internal displacement of the ulna, which he was inclined to think might be found. As such an examination had already been made, while the boy was insensible to pain, the examination was not repeated.

About this time two suits were instituted against Dr. Moore. One in the name of the boy, by his father as guardian, on account of the loss of the use of his arm; and one by the father, for expenses and loss of the service of the boy; both claiming heavy damages.

Dr. Burns was not included. The opinion he had expressed might be of service in evidence.

About a year after the accident, Dr. Burns was called by the plaintiffs to depose as to his knowledge of the matter and the present state of the arm.

He stated then that "the bones don't appear to be in the proper place"—"it" (the arm) "is very much enlarged about the joint"—"the appearance is that the joint is not in its proper place."

On cross-examination he was requested to point out any bone connected with the joint, which was not in its natural position. To this he replied that he "did not know as he could."

At this time there was a slight crackling in the joint, when moved; and the arm could be bent to nearly a right angle with the upper bone.

Dr. Burns afterwards, from a more careful examination of the subject in reference to there having been a fracture of the coronoid process, entirely changed his opinion of there being any unreduced dislocation.

About two years after the accident, Dr. C. M. Tuttle, of Littleton, went and examined the joint, and compared the appearances with those of the case of Sir Astley Cooper, as described in his book, and came to the conclusion that it was an injury of that kind; and that the recovery in this case was as good as that is represented to have been.

About the same time, Dr. E. R. Peaslee, Professor of Anatomy, &c., in Dartmouth College, was called upon by the plaintiffs to examine the arm and testify as to its condition.

After a careful examination of the boy alone, he stated that the following was the condition of the limb:

"I find some difficulty at the elbow joint. In the first place there is a defect in extension; secondly, there is a defect in flexion (the arm not being bent beyond about at a right angle); thirdly, there is some deformity at the joint; fourthly, the ulna

is somewhat displaced backwards; fifthly the radius is also slightly displaced; sixthly, the head of the radius is enlarged." The displacement of the radius is "backwards and downwards, being slight," and that the head of the radius was "very near on its natural articulating surface, but not precisely;" "that he could discover no lateral displacement of the ulna." He said that a partial dislocation of the radius backward, was not an accident recognized by surgeons as he was aware, unless complicated with a fracture of the coronoid process; and that in this case it was "altogether probable that the coronoid process had been broken;" and that the boy bore the aspect of a highly scrofulous constitution.

Soon after this the boy was taken by the father, accompanied by his counsel, for an *ex parte* opinion, to Dr. J. P. Bancroft, of St. Johnsbury, Vermont. Dr. Bancroft says he made the examination and declined giving an opinion until he had time to refer to his books, which he did, and came to the conclusion that it was a case of fracture of the coronoid process; and that he never had had experience in such a case. He also said that a scrofulous diathesis was a serious impediment to complete recovery in injuries of joints.

The physicians already named gave depositions out of court to be used on the trial.

Also, Dr. E. Lyman, of Lancaster, who had been in practice fifty years, was applied to by the plaintiffs. He had examined the arm a few months after the injury, and also examined it when he gave his deposition about a year after the accident. He, without hesitation, called it "a case of bad surgery;" said the ulna was in place, but that "the radius was thrown off, as he conceived it."

The trial in court was a long one; nearly a week was spent in presenting the testimony to the jury. Preparation was made to appeal to the sympathies of jurors. The boy-plaintiff appeared with his counsel accompanied by his young married sister with a nursing child, unattended by their father.

The plaintiff in his opening took the position that the defendant had made a mistake in supposing at first that the case was one of simple dislocation: and also that in treating it as such, he had not proceeded right, in not applying bandages, splints,

and a sling ; and securing the arm bent to a right angle with the humerus.

Another point was that he had made another mistake in altering his mind and thinking that it was complicated with a fracture of the coronoid process ; and undertook to prove that the original accident was a fracture of one of the condyles. Another point was that the defendant had neglected the boy because his father was poor and did not pay his doctor's bills.

To sustain the two first positions, he asked leave to introduce the book of Sir Astley Cooper on "Fractures and Dislocations." The defendant waived all legal objection to the use of the book ; and the court allowed either party to read from the book such parts as he chose, thus making Sir Astley Cooper a witness in the case for the plaintiff.

The counsel for the plaintiff then read Sir Astley's directions for treating a simple backward dislocation of the forearm ; after reduction "to bandage the arm in the bent position, the limb to be supported in a sling ; the forearm to be bent rather less than a right angle with the upper arm ; a splint placed in the sling for the better support of the limb." Nothing of this sort was done in this case.

The plate of Sir Astley, representing such a dressing, was exhibited from the book to the jury.

On the second position that the original injury was a fracture, he read the remarks that oblique fractures of the condyles are often mistaken for dislocations, and happen more frequent in children than in persons of advanced age ; and as an evidence of a fracture which had never united, he exhibited the crackling sound in the joint as *crepitus* of bones ; and that such an injury could not be properly treated without bandages and splints.

On the third point the saying of the defendant at the time of his first visit that he did not think it necessary to come again, was evidence of indifference and neglect.

The first of these allegations, "that the case was taken at first to be one of simple backward dislocation," was not denied by the defendant, but he contended that he had good reason to suppose it was so ; a fracture of the coronoid process being an exceedingly rare accident, that Sir Astley Cooper, in all his

immense practice, had noticed it only once, and that in a patient sent him from the country ; and in this case it was impossible to discover such an injury at the time, without a handling too severe to be justified.

As to not using bandages, splints, a sling, and confining the arm in a bent position ; he said they were not essential to a good recovery in a simple backward dislocation of the forearm, and were used only as contributing to the comfort of the patient in carrying the limb ; and further, that in all cases where surgeons direct their use, it is understood that there is no great degree of inflammation ; that in highly inflamed limbs they would be injurious. The 261st case from the plaintiff's book was read, where Sir Astley Cooper, after reducing the dislocation, laid the arm on a pillow, with a poultice—inflammation supervened—in four days the integuments from wrist to shoulder became gangrenous, and the patient died the same evening.

The plaintiff himself proved that the boy's arm swelled above and below the elbow, and "shined like a glass bottle."

The defendant contended that after reduction, followed by severe inflammation as in this case, the inflammation became the paramount disease ; and that Sir Astley's book on "Fractures and Dislocations" did not treat specially of "Inflammation."

Dr. Hibbard, of Lisbon, explained to the jury the proper treatment in such cases, and the great danger of compressing inflamed parts by splints and bandages.

In answer to the noise in the joint being evidence of a fracture ununited, Dr. Morgan, of Haverhill, testified that it was common in cases of injured joints, and very different from crepitus. He also read to the jury out of the plaintiff's book that "sometime after the accident" (dislocation) "it frequently happens that a sensation of crepitus is produced by effusion of adhesive matter into the joint, and surrounding bursæ ; the synovia in which becomes inspissated, and crackles under motion. But every practitioner ought to be able to distinguish this crackling from the grating crepitus of fracture." Also that "the degree of inflammation which succeeds to these accidents is generally slight ; but in some cases it is very considerable, and produces great tumefaction, which added to that re-

sulting from extravasation of blood, frequently renders the detection of the injury exceedingly difficult."

Dr. Crosby was called before the court and requested to examine the arm, to enable him to testify. He declined making any examination for the purpose of obtaining knowledge to enable him to testify, but was ready to answer all questions so far as his present knowledge should enable him; unless the court was of the opinion that the law required him to make an examination for that purpose. The judge ruled that physicians are required by law to do so, as an expert would be required to look upon a bank note and say whether it is genuine.

Dr. Crosby then made the examination, and stated that the limb bent much better than it did when he first examined it, about two years before. He thought the difficulty might be owing to the rigidity of the ligaments; that he could not satisfy himself that there was any displacement of the bones of the forearm; that there was no evidence of any fracture of a condyle; could not tell whether there had been a fracture of the coronoid process—regarded it to be very difficult to detect a fracture of that process in a case of dislocation; could not tell what caused the stiffness of the joint; had thought on his first examination, and thought now that the articulating end of the humerus, the trochlea, might have been broken, and thought the deformity might be accounted for in this way better than any other. He had never found a fracture of the coronoid process, still it might exist here. He thought the reduction of the dislocation had been properly made.

The physicians all testified that rest and cold evaporating lotions were the main elements in treatment of dislocations after reduction of the forearm. They also testified that fractures of the coronoid process were very rare, no one having recognized that accident in his practice; and further, that recovery after it would probably be always imperfect, it being generally believed that union between the broken fragments would be by ligaments, if at all.

Dr. P. Spalding, of Haverhill, testified that the arm above the elbow was three-fourths of an inch enlarged. The head of the radius appeared a little raised; that when the arm was extended the olecranon was carried from the external condyle of

the humerus about one-half an inch, and yet the distance from the olecranon to the extreme point of the internal condyle was the same in both arms; that the condyles of the humerus by admeasurement were precisely the same as to their extreme points; and that the arm when extended seemed to permit a straight elevation of the olecranon from the fossa of the humerus; that pronation and supination of the radius were perfect; that when the arm was nearly extended the tendons of the biceps and brachialis muscles were put to the utmost stretch; and that when the arm was flexed to a right angle, the ulna seemed to come in contact with a solid substance in the hollow of the arm, so as to prevent entirely any further flexion.

He gave it as his opinion that there had been a dislocation of the elbow backwards, together with fracture of the coronoid process of the ulna; and suggested that the broken point had adhered to the trochlea, and had not united with the ulna.

As to negligence on the part of the surgeon, the plaintiff, in his zeal to make the time as short as possible between that of the accident and the arrival of the doctor, made it appear that the surgeon rode from his home to that of the patient, nine miles, over a rough, uphill road, in one hour (which was really straining the truth, but it showed no lack of promptness on his part). The defendant also offered to show the declaration of the father that he believed Dr. Moore did the best he could, and that he never charged him otherwise; that all he blamed him for, was that he would not acknowledge the arm wrong when Dr. Burns said it was, and he must have known it was. To the admission of this testimony the plaintiff's counsel objected, the boy being the party to the suit, and not the father. The judge was not clear that it was proper, and the defendant's counsel thought it best not to put it in, as it might operate to set aside the verdict, in the event he obtained it.

The judge in his charge to the jury observed that the having a bad arm is not a light matter, and that the reputation of this defendant is also not a light matter.

The plaintiff alleges that he procured the attendance of Dr. Moore, that he did not set the limb properly, that he did not bandage the arm, or treat it properly afterwards.

The defendant alleges that there was a dislocation back-

wards, which he supposed to be simple, but finally found to be complicated with a fracture of the coronoid process, or of the trochlea of the humerus.

That at his first visit appearances did not require him to visit it again, that splints and bandages were not proper—that the inflammation was such as would have made them injurious.

That a fracture of the coronoid process, or of the trochlea, is never followed by a perfect recovery. That there were deposits within and around the joint, caused by the inflammation; and that the stiffness consequent upon these deposits may and very probably is an important part of the difficulty.

There is no doubt that the boy is incurably lame, but from what cause does it arise? If the surgeon exercised reasonable care and skill in the case, he is not liable. He is not obliged to guarantee a perfect cure.

It is charged that he was negligent. If he supposed it to be a simple dislocation, and that it was reduced, was there any necessity of his going again? Was it proper that he should direct to bring the boy down to the village, when the inflammation had subsided? Does the fact that he went there in one hour show that he was prompt and attentive? and the fact that he took Dr. Burns, an old and experienced physician, with him, show that he was careful, and wanted to treat it carefully?

You are to decide whether the permanent lameness of the plaintiff is caused by the fractures or deposits, or by the want of skill and care on the part of the surgeon.

The jury, after deliberating a long time, reported that they could not agree, and were discharged. It was rumored abroad afterwards that they stood three for plaintiff and nine for defendant. It was further said that two of the minority would agree with the nine for the defendant, if the *one* would. Before the next term of court, the plaintiffs became nonsuit by agreement.

Some of his medical brethren expressed a wish at the time of trial to know the defendant's own opinion in regard to the real nature of the injury, as he carefully avoided expressing any that might at all influence theirs, while the matter was undergoing a legal investigation. His opinion is based on the four following facts, three of which were unknown to them :

1. The bones of the forearm were drawn into place with more ease than was expected—the chuck as they slipped into place, though distinct, was less so than usual, but did not raise the idea of a fracture, at the time.

2. The bending of the arm caused a considerable increase of pain; the limb being much swollen and the boy very sensitive, this was not regarded as evidence of a fracture.

3. There was for a considerable time not only a very decided thickening of the integuments directly over the coronoid process, but the tenderness at that point was greatest.

4. When the arm is flexed the ulna and radius seem to be in place; when extended, the point of the ulna strikes a little back and to one side of the posterior fossa, showing a slight backward slipping, for the want of a full support of a perfect process in front, and drawing the radius with it, the circular ligament probably being not broken.

That the broken point of the coronoid process has adhered to the front of the trochlea, or some solid growth thrown out there, against which the remainder of the process strikes on flexion, appears to him very probable.

When driven to a careful investigation of the subject of fractures of the coronoid process, the defendant was led to notice the two following statements in standard surgical works, which are calculated to mislead, and may be seized upon by plaintiffs' counsel to operate on the minds of jurors:

Mr. Fergusson in his "Operative Surgery," says of backward dislocation of both bones of the forearm, "In such a case the coronoid process will *probably* be broken." This was urged in the trial by plaintiff's counsel as contradicting the medical testimony, and charging a conspiracy on the part of the doctors to defeat the ends of justice, in saying that the accident was very *rare*.

One other case came to the notice of the defendant, but not to the plaintiff's counsel:

Dr. Dorsey in his Surgery, says that Dr. Physick once saw a case of fracture of the coronoid process; that the forearm was kept fixed at a right angle with the humerus, and the tendency of the brachialis muscle to draw up the superior fragment was

counteracted in some measure by pressure of the roller above the elbow, and "that a *perfect cure* was *readily obtained*."

In the first, perhaps the word "possibly" has given place to "probably."

In the latter, it may well be doubted whether the case is fairly represented by Dr. Dorsey, it not having come within his own observation.

A. MOORE.

Littleton, N. H., 1855.

PART III. — PROCEEDINGS OF SOCIETIES.

SMYRNA HOSPITAL MEDICO-CHIRURGICAL SOCIETY.

Dr. Chasseaud, of Smyrna, exhibited a specimen of fibrous polypus of the uterus, removed from a woman, 50 years of age. It was of seven years' growth, about the size of a cocoa-nut, of a flattened, globular form, and had been attached to the inner surface of the uterus by a very small peduncle. It consisted principally of a firm fibrous stroma, and had been covered by the mucous membrane of the uterus. Dr. Chasseaud considered that it exemplified the manner in which these growths were formed, first among the muscular fibres of the uterus, and then gradually pushing the mucous membrane before them.

Mr. Holmes Coot had dissected a great many uteri, in which these growths had been observed, and agreed with Dr. Chasseaud's view as to their pathology. In some cases, they might be felt as hard lumps in the walls of the uterus; in others, they gradually projected externally, and became covered with a layer of peritoneum, until at length they might be more or less pedunculated and loose; or they might project internally, and become covered by the mucous membrane lining the organ, as in Dr. Chasseaud's case. He had seen one case, in which removal of such a tumor by torsion had been followed by very alarming symptoms.

Mr. Holthouse referred to the inutility of any measures other than operative for the removal of fibrous tumors in other parts of the body; but he was not so sure that the rule applied to these tumors when seated in the uterus. He attended a lady about a year and a half ago, who had a large tumor, supposed to be fibrous, imbedded

in the posterior wall of the uterus, and projecting into the vagina. She was the subject of repeated and violent uterine hæmorrhages. Dr. Locock, who was called in, recommended the application of leeches to the part, to be repeated at short intervals ; small doses of the bichloride of mercury were also prescribed. The lady subsequently went to Paris, where the leeching plan was still pursued, and lately returned to England quite recovered. These tumors sometimes cease to grow, and undergo calcareous degeneration. A very fine specimen of such a tumor Mr. Holthouse recollected to have seen at the Pathological Society of London.

Mr. Spencer Wells had assisted Dr. Wood in the removal of this tumor. He (Mr. Wells) could not reach the uteri with his finger, and accordingly introduced his whole hand into the vagina, and found the pelvic cavity nearly filled by the tumor, and the os uteri just above the promontory of the sacrum, the small peduncle being attached within the cervix. He was enabled to twist the tumor three times round on its axis, and thus to break off the peduncle, when Dr. Wood introduced a pair of midwifery forceps, and removed the tumor, the perineum requiring as much support as in a case of labor. He (Mr. Wells) thought it was well understood that fibrous tumors of the uterus frequently disappeared under treatment. He had seen two cases himself, in which they had done so under a course of the Kreuznach waters, and had been told of others by Drs. Simpson and Rigby. He had also seen a case, with Mr. Baker Brown, in which the tumor had diminished very much under the use of the common formula of bichloride of mercury and bark, and Mr. Brown had told him of other similar cases.

Mr. Hulke believed that if these tumors were left to themselves, they frequently disappeared spontaneously, or perhaps as frequently became calcified. In one case he related, what was supposed to be a large vesical calculus was found in a churchyard, but it proved to be a calcified fibrous tumor of the uterus.

Dr. Chasseaud said that a remedy in popular use in Asia Minor was a sort of calcified sea-weed, which probably owed its virtues to the same principles as the Kreuznach waters, iodine and bromine. At the suggestion of Dr. Cullen, he promised to bring some specimens to the Society for analysis.

Mr. Atkinson then exhibited a vesical calculus of peculiar shape, which he had recently removed by lithotomy from a Jew, aged 20. No section had been made. The patient had complained of symptoms of stone in the bladder for nine years, which at length became

so urgent that he could not stand erect, and he suffered continually from severe pain. A stone was felt on sounding, occupying the prostatic portion of the urethra, and when the sound passed this, what appeared to be a second stone was felt in the bladder. The stone was found impacted in the prostatic portion of the urethra on three subsequent occasions, and some difference of opinion existed as to there being more than one stone, most of those who examined believing that there was only one. The stone was in the bladder on the day of operation. The ordinary lateral method was that adopted. Nothing unusual occurred during its performance, except that the stone eluded the blades of the forceps, and Mr. Atkinson removed it by using his forefinger as a scoop. The patient has since gone on favorably.

Mr. Holmes Coote, after some remarks on the different modes of performing lithotomy, and on a recent proceeding of Mr. Lloyd's, in which that gentleman cut in the mesial line, at once laying the urethra and rectum open together, a proceeding the results of which Mr. Coote did not speak of as very encouraging, inquired with what kind of knife Mr. Atkinson had cut into the bladder?

Mr. Atkinson replied, with an ordinary sharp-pointed scalpel.

Mr. Spencer Wells said, that many years ago, at St. Thomas's Hospital, Mr. Tyrrel, a most careful and dexterous lithotomist, had cut through the back of the bladder, and the consequent extravasation of urine into the peritoneal cavity had killed the patient. Mr. Tyrrel then observed that this case would teach him never again to cut into the bladder with a sharp-pointed knife, and he never did. The case and remarks made such an impression upon his (Mr. Wells's) mind, that he determined to act with similar caution, and he was more and more convinced every year of its necessity. Only last year a surgeon of one of the largest of the London hospitals had made this fatal error twice within the course of a few months; and Mr. Wells contended that, however skilful or experienced a man might be, he was not justified in running a risk which might be avoided by simply changing the knife with which the first incision was made, and the urethra opened with a blunt-pointed one. All danger from sudden, involuntary movement of the patient or assistants, or sudden contraction of the bladder, was thus avoided.

Mr. Hulke said that the danger of transfixing the bladder depended more on the staff than the knife. If the groove were deep, and the extremity buttoned, the operator could scarcely go wrong. Cheselden, Liston, and Fergusson, were all in favor of using a scal-

pel, and their authority was quite sufficient to outweigh any objections which the practice of careless surgeons might appear to enforce.

Mr. Eddowes said that *Mr. Liston* was so strongly impressed with the necessity of keeping the knife firmly pressed in the groove of the staff, that he did so with such force as in one case to break the knife.

Dr. McCraith showed four specimens of calculi which had been successfully removed by *Dr. Wood* himself. He did not think the disease very common in Smyrna.

Mr. Holmes Coote then related two cases of superficial malignant disease of the face, and made some remarks upon the relations between lupus and superficial cancer. He had lately treated two cases of serious ulcerative disease of the face in two officers who had been exposed to the severe heat of the sun in the Crimea. The disease was termed "Lupus exedens," but it presented many of the characteristics of epithelial cancer. In one case, seen at the commencement, there was rapid hypertrophy of the papillæ of the skin of the face near the root of the nose, raising the epidermis into a pimple in a spot which had been sunburnt. Heat and redness extended to the neighboring part of the nose and cheek, and was followed by the development of fresh pimples or tubercles. Then the epidermis became thin and peeled off, or burst, a small quantity of sero-purulent fluid escaping and drying to a scab, under which ulceration commenced and rapidly destroyed the hypertrophied papillæ, leaving a deep sore, with irregular surface and foul aspect, bounded by a sharp, irregular, undermined edge, which was frequently red and swollen, especially when the disease was spreading. As remedies began to prove effectual, the raised papillæ became shrunken and bloodless; a thick scab formed over a depressed cicatrix, and in a few days this part had healed; but when, in a later period, there was deep ulceration, the process of granulation and cicatrization was tedious. In the second case the disease was greatly advanced before the officer fell under *Mr. Coote's* care. Ulceration had crept over the surface of the entire right cheek, which presented an irregularly depressed reddish cicatrix surrounded by deep unhealthy ulceration, which threatened the eyelid above and the mouth below. No caustics or any local irritant were used in either case. In both, arsenic was given combined with bark, and the result was most successful. *Mr. Coote* referred to cases of a similar nature he had seen in London, among patients who had returned from hot climates, and entered at some length into the question of the relation between such forms of malignant ulceration and cancer, expressing his conviction that there

is no form of cell peculiar to cancer, and that the microscope alone is not sufficient for the diagnosis of a cancer cell. He concluded by expressing his opinion that as these cases had proved impracticable in the Crimea and at Constantinople, and had improved immediately after their arrival at Smyrna, the facts should be known in addition to the many others proving the salubrity of the air of a place which had been unjustly abused.

Mr. Spencer Wells inquired of the resident practitioners present as to the nature of the disease known as the "Aleppo Button." He had seen one case in consultation, in a gentleman returned from Aleppo, which was nothing more than ordinary lupus of the face in the tubercular stage.

Dr. McCraith said the few cases he had seen did not resemble lupus. In the first stage a hard subcutaneous swelling, like a boil, formed in various parts of the body, the surrounding cellular tissue being thickened, and constitutional disturbance very slight. This usually went on for about a year, and then ulceration commenced, which, though very obstinate for a time, ended by granulation and cicatrization. In this and other forms of obstinate superficial ulceration he had found arsenic very useful, more especially if applied locally. He kept a piece of lint on the part, wetted with Fowler's solution, either pure or diluted, until it produced no smarting.

Dr. Chasseaud said the Aleppo Button was quite a distinct disease. Very few European residents at Aleppo escaped it, and it was attributed to the water of the river which supplied the town. The scab which formed when ulceration commenced, from drying of the exuding pus, resembled that of rupia.

Mr. Holmes Coote said that these descriptions tallied remarkably with a disease called the "Scinde Boil," which had been very troublesome in Sir Charles Napier's army. He had seen several cases in England, among officers who had returned from that army, and the water of the rivers in Scinde was blamed as the cause of the disease.

Mr. Hulke said that there was a great tendency to tumors and diseases of the skin among the residents of Smyrna. He had seen several examples of cheloid and of tumors of cicatrices, and others of tubercular lupus, or epithelial cancer. He had treated the latter with great success by the free use of the nitrate of silver locally, without any constitutional treatment.

The *Chairman* did not consider that Mr. Coote could fairly attribute the recovery of his patients to the salubrious climate of Smyrna.

He was disposed rather to conclude that the arsenic should be praised for the cure, and related a case of seven years' standing, in London, in which this mineral had proved successful in his hands, a great variety of other remedies having been previously tried by other practitioners, and failed.—*London Medical Times*.

PART IV.—CHRONICLE OF MEDICAL PROGRESS.

Whooping Cough, its History, Nature, and Successful Treatment. By
LAURENCE TURNBULL, M.D., &c.

This disease has been to me one of much thought and considerable personal interest, from having had four of my children attacked with it in its most aggravated form. My attention was also particularly called to it during the months of May and June, 1854, when the malady prevailed to a considerable extent in our city; cases of it have also continued to occur up to the present month, July, 1855.

In referring to the works of Hippocrates, (Sydenham Society's Edit. in two vols., London, 1849,) I find no description of whooping cough, neither is there any account of it in the Seven Books of Paulus Ægineta,* so that I would infer that the Greeks, Romans and Arabians were not acquainted with it as a distinct disease.

Dr. Willis was the first medical writer who accurately described whooping or chin cough, his work being published in 1682, (in two vols.)† It was not until the present century, however, that this disease was fully investigated and made known to the medical public, which was chiefly done by the labors of Rosen, Cullen, Schæfer, Hufeland, Mathai, John, Authenrieth, Watt of Glasgow, and Albers of Bremen. It is stated by Rosen, that it passed from the East Indies and Africa into Europe.

First stage.—The first stage of whooping cough has no distinct and prominent symptoms by which it can be distinguished from ordinary catarrh, or bronchitis, except, perhaps, a slight difference in the voice and cough which sounds louder and shriller; the expectoration is

* The Seven Books of Paulus Ægineta, translated from the Greek, by Francis Adams, LL. D., in three vols., London, printed for the Sydenham Society, 1844.

† "Tussis puerorum convulsiva, sue suffocativa et nostro idiomate *chin-cough* vulgo dicta." (Opera Omnia, Amst. 1682, vol. ii. p. 169.)

usually limpid, but in some instances I have noticed it opaque, yellow, and even greenish.

This period may last from five days to as many weeks. Lombard states that in an epidemic which occurred at Geneva, it lasted from one month to six weeks; when the whoop is going to occur, it is usually noticed in the second or third week, but I have had several cases where the cough was present without the whoop.

This absence of the whoop is often very unfortunate, for children may in this way propagate the disease, and cause whole families and even schools to be attacked. This fact was proven in the case of my son, aged seven years; he sat in school by the side of a little boy who had a cough, which was very sonorous and painful to listen to, but the anxiety of the teacher was much relieved by being informed that his physician did not consider it whooping cough; subsequently the youngest child of this family was attacked by the disease and hooped, and the boy was then kept from school, but too late to save the other members of his class, ten of whom took the disease, so that the school was nearly broken up; my son communicated it to his three sisters, who all suffered more severely from it than he did.

I therefore think that children should not be allowed to mix with their companions when suffering from a cough of this character, if the disease prevail in the locality.

Second stage.—The second or spasmodic state of this malady, is easily known, by the peculiar sound and suffocating character of the cough. In this stage, almost every organ is irritated, and it even produces discharges of blood from the nose and mouth. The expression of the countenance is most distressing. When this stage is at its height, the child seems to know by some inward sensation that the attack is coming on, and it either cries or lays hold of some object by which it can support itself until the paroxysm is over. The face and neck become swollen, and in some instances remain so, and the child, at the termination of a fit of coughing, either discharges some thick tenacious ropy mucus, or evacuates the entire contents of the stomach.

The least mental excitement, either of joy or sorrow, will produce an attack, and the number varies with the severity of the disease. The paroxysms last from one-fourth to three-fourths of a minute.

The average duration of whooping cough is from six to eight weeks if not checked, but in many instances it lasts as many months; second attacks are rare, and yet they do occur. Whooping cough prevailed in this city with measles, in May and June, 1854, followed in October and November by chicken pox, and in January, 1855, by

scarlet fever, with sporadic cases of catarrh and croup, showing a connection or relation one with another, so that the same causes may give rise during an epidemic to simple catarrh, croup, whooping cough, or even measles.

The complication of whooping cough I cannot enter into, but the chief of them are croup, bronchitis, pneumonia, pleurisy and diseases of the brain and cavity of the abdomen, which are to be recognized by their characteristic symptoms.

According to Billard, post-mortem examinations have not revealed anything uniform in this disease, except bronchial catarrh in its various stages.

Sydenham imputed the disease to a subtle and irritating vapor in the blood. Hufeland considers that the eighth pair of nerves is diseased, and is the cause of the double irritation of the bronchia and stomach. According to M. Guersent (*Dict. de Méd.*) whooping cough is a catarrhal affection, seated in the trachea and bronchi, consisting of a specific inflammation, accompanied with spasm of the trachea and glottis. Dr. Watt, of Glasgow, considers the disease to be inflammatory and seated in the bronchi. Albers, of Bremen, considers whooping cough to be an affection of the nerves of the thorax, with which bronchitis is frequently complicated. Laënnec regards it as a variety of pulmonary catarrh, and from the convulsive character of the cough he calls it convulsive catarrh.

Dr. Webster (*Med. and Phys. Jour.*) is of opinion that the symptoms, when closely viewed, suggest the impression that whooping cough depends upon inflammatory irritation of the brain or its membranes. This is the opinion held by Dr. Copland, and very many distinguished men of the present day, but to my mind it is not satisfactory. The whooping cough, in its first stage, is certainly of an inflammatory character, chiefly affecting the lining membrane of the air passages, but this is of a specific nature. In the second stage there is no evidence of inflammation indicated either by the pulse, skin, or any other organ, but there is a powerful irritation of the laryngeal constrictor, and bronchial muscles and nerves, producing a cough which occurs rapidly many times so that a single inspiration is followed by five or six successive expirations constituting paroxysms of coughing (*tussis accessus*), accompanied with redness of the face, watery eyes, headache, *tiinnitus aurium*, fulness of the cervical veins, retching and sometimes vomiting.

By some writers it has been considered that this disease was produced by a peculiar miasma, acting chiefly on the nerves, and is also

ascribed to the presence of minute insects in the air (Boehme—Linnæus), or, according to Prof. J. K. Mitchell, its epidemic origin may be a peculiar fungus ; “the spores of these plants are not only numerous, minute, and indefinitely diffused, but, like the animal, all have the power of penetrating into and growing upon the most interior tissues of the human body,” passing into the systems of those exposed to its influence by the respiratory organs or stomach, producing the irritation of the mucous membrane of the air passages. “Introduced into the body through the stomach, or by the skin or lungs, cryptogamous poisons are known to produce diseases of a febrile character, intermittent, remittent and continued—and even the disease of the mucous membrane, termed aphthæ, arises from the presence of minute fungi.”*

Dr. M. has not made this application of his doctrine to this particular disease, yet I do not see any good reason why it should not be so applied. According to Dr. Spengler, of Ellville, epidemic diseases depend on the presence or absence of ozone. He states that in the village of Roggendorf, in Mecklenburgh, towards the close of 1846, when slight catarrhal affections became prevalent, but slight traces of ozone were to be detected in the air. With the opening of the following year, however, these catarrhal affections assumed the severest forms of tracheal and bronchial disease, and whooping cough became common both among children and adults ; then reagents detected a great increase of ozone in the atmosphere.”†

Prognosis.

The prognosis in uncomplicated whooping cough is very favorable, and is unfavorable only in proportion to the dangerous nature of its complications and the age of the child ; the best season for a favorable termination is spring or summer.

The modes of Propagation.—The disease may occur epidemically or sporadically, and it possesses infectious properties. It is propagated through a family from one to another ; they are not all apt to be attacked at the same time, and by removal to a distance a child may escape. Dr. Cullen believed that it disappeared in from four to six weeks, but this has not been proved by subsequent observation. Children who have suffered from this disease, should not be sent to school or play with their companions for at least two months.

* Lond. Med. Gaz. Henlie's Zeitschrift, vol. vii. p. 1.

† On the Cryptogamous Origin of Malaria and Epidemic Fevers. J. K. Mitchell, M.D. Philada. 1849.

Treatment.—There are but two classes of symptoms to be combated in this disease when no complication exists. The inflammation must be reduced by depletion, expectorants and refrigerants. In the second class of symptoms, the chief object is to diminish the abundant secretion and allay the great irritability of the laryngeal constrictor, and bronchial muscles and nerves.

The means to accomplish this, in my hands, have been the abstraction of blood ; the application of a few cups or leeches to the nape of the neck or under the clavicle, with counter irritation, by means of sinapisms and blisters, which will soon allay the congestion of the brain or lungs. To diminish the febrile action small doses of tartar emetic, combined with Dover's powder or prepared chalk, with the free use of syrup of ipecacuanha as an emetic may be given ; these will lessen the bronchial inflammation, and remedy the often disordered state of the stomach and bowels.

During the whole stage of the disease, demulcent drinks should be freely administered, such as flax seed tea, barley or rice water. When fully satisfied that the inflammation has been subdued, indicated by a slower pulse, less heat of skin and no active congestion of the brain or lungs, I have then followed the treatment with belladonna, and my success with this remedy has been most gratifying. Before administering it I tried, in vain, the free use of cochineal in combination with alkalies, assafoetida, opium, alum, hydrocyanic acid, &c. In every instance in which the system was fully brought under the influence of the belladonna, indicated by dilatation of the pupil with confused vision and reddened skin, I was enabled to check the annoying cough and hoop of thirteen children during the months of May and June, 1854, and seven cases since that time, making twenty cases in all, eight males and twelve females ; the youngest was nine months and the eldest ten years.

The following was the method followed : The system being prepared by reducing the inflammation by the means before spoken of, obtain, if possible, English extract of belladonna, fresh and good ; let the extract be triturated with water or simple syrup ; if it is to be kept for some time, add a small quantity of alcohol. The dose for a child three months old is the sixteenth of a grain every three hours, to a child one year, one eighth of a grain, and so to other ages in proportion.

Inform the parent or nurse of the change it will produce upon the eye, also that it may redden the skin. When full dilatation of the pupil is brought about, the medicine is to be intermitted until it has

gone off again ; the belladonna is to be administered in slightly increasing doses, so as to keep the child under its influence for several days or until the paroxysms are checked, which will usually occur towards the sixth or eighth day of the second stage.

In the twenty cases cured by the use of the belladonna the cough and whoop returned in a few cases on exposure to cold, or in disagreeable, windy weather ; but by combining the extract with syrup of ipecacuanha a few doses soon checked the cough and whoop ; in only one case out of this number was it complicated with inflammation of the lungs and this case recovered.

The average duration of my twenty cases was ten days after the whoop had commenced, when the case was free from complications, which shows the great advantage of this treatment. The ordinary duration of the disease, when treated in the usual manner, is from $1\frac{1}{2}$ to $3\frac{1}{2}$ months ; even by prussic acid, or the application of nitrate of silver, the average given is from two to three weeks. It is stated by Dr. Gibb that, with the use of nitric acid, the average duration was only six or seven days. Several physicians who have used this remedy, however, do not find such favorable results from its use.

I have added to my communication some extracts from the experience of a few distinguished medical men on the use of this important agent, belladonna.

This remedy was used in whooping cough about the year 1783, by Dr. Buckhaave, of Copenhagen, who gave the powdered root in doses of two grains, morning and evening, to a child of five or six years of age. The cure, it is stated, was generally accomplished in from seven to fourteen days.*

Dr. Miquel, (of Neuerhaus), says the belladonna is a remedy upon which he can always depend in this disease. In the course of many epidemics which he has observed during fifteen years, he has constantly cured the cough in eight days.†

Dr. Samuel Jackson, of this city, late of Northumberland, who although he was not the first to employ the belladonna, yet by his valuable publication in 1834 brought its virtues prominently before the medical public, has continued its use for twenty years, and his confidence in it powers to arrest the paroxysm and cure the second stage of whooping cough in the great majority of cases is undiminished.

* Dr. Duncan's Commentaries for 1793, and Dr. Gibb on Pertussis, p. 282, 1854.

† Vol. vii. Amer. Jour. Med. Sciences, p. 524, from Archives Generales, August, 1830.

Dr. Hiram Corson, formerly President of the Medical Society of the State of Pennsylvania, a distinguished practitioner of Montgomery county, Pa., in a paper on the efficacy of belladonna as a remedy in Pertussis, published in the Amer. Jour. of Med. Science, for Oct. 1852, makes the following observations : " My experience in pertussis had satisfied me that of all the remedies in common use, those recommended by writers upon diseases of children are almost useless. Children affected in the winter continued to cough and strangle and suffer for many weeks with scarcely a perceptible amendment. It was painful to visit and mortifying to prescribe for those afflicted with this malady."

He commenced the use of belladonna in four cases, and in one week they were all well. His method of using it was to begin with the sixteenth of a grain to children under one year every two hours, and increasing a little every day until full dilatation of the pupil occurred, the skin became flushed and vision confused ; this he accomplished by dissolving eight grains of the extract in an ounce of water, nine drops of which contained the eight of a grain.

In an epidemic in 1840, he used the belladonna in hundreds of cases with great relief in nearly all. By giving it in small doses at first, the fears of the patients were allayed. In 1847-8, he also prescribed it in numerous cases with much success. He concludes his paper in these words : " During the last seventeen years, I have given the extract of belladonna to hundreds of patients from two months to fifty years of age, and am firmly convinced that it has a greater control over whooping cough, than any other remedy in common use. That while, in a few cases, the system did not seem susceptible to its action in the doses I have prescribed, yet in nearly all the disease yielded quickly. It is a safe and efficient remedy for pertussis in children of any age.

Dr. Eberle, in his Treatise on the Diseases of Children, second edition, remarks " that the belladonna has been highly celebrated, and is without doubt, by far, the best article of the kind we possess. My own experience leads me to testify confidently on this point. I have prescribed it within the last six years, (1834), in perhaps twenty cases, and in the majority of them with evident advantage." Professor Borda, he remarks, was the first he believed who used it as a remedy, and his belief in its efficacy is almost unlimited.

Hufeland and Alibert are almost equally decided in their praise of the virtues of this article.

The mortality from this disease in our city in 1850 was 114 ; 1852,

168 ; and for 1853, was 64. In 1853, in the district of Richmond, it occurred as an epidemic. In severe cases, Dr. Janvier used the belladonna with the best results. "It mitigates the paroxysms better than any other sedative."*

Dr. Condie remarks in his work on diseases of children, that the narcotic from which the greatest amount of benefit is to be anticipated in this disease, is unquestionably the belladonna ; it has been very extensively employed, and the evidence in its favor is strong and conclusive, (by Kahleiss, Janin, Hufeland, Widemann, Raisin, Guibert, Alibert, Schäfer, Laënnec, Müller, Blache, Maunsell and Lombard).

He further remarks that he had given the belladonna a very fair trial, and has, in many cases, been pleased with the prompt and decided relief produced by it, "while in other instances it appeared to exert no influence whatever."

I think that this last remark may be often accounted for by the bad character of the belladonna, which is even found in some of the drug stores in this city, for it is an uncertain preparation unless when procured by evaporation in vacuo, for some samples from some of the Parisian shops were found by Orfila to be quite inert.

Dr. Williams, of London, has used belladonna with great advantage in his practice. He gives it in quarter-grain doses to a child of two years, increasing the dose to double that quantity or more, where it fails to relieve. He remarks that these doses, in general, cause some dilatation of the pupil, and conceives that the remedial agency of the drug depends on the same power to diminish irritability of the bronchial and laryngeal muscles which is here evinced with regard to the iris."†

Dr. G. A. Rees has found belladonna one of the most efficacious remedies in Pertussis.‡

Dr. Waller cured two cases with the twelfth of a grain of extract, three times a day ; prussic acid and conium had failed in affording any permanent relief.§

Eberle assigns the highest place among narcotics to belladonna in whooping cough.

Dr. Churchill says that this is perhaps the most influential narcotic

* Report Phila. County Med. Society, for 1853.

† Gibb on whooping cough, p. 284, from Medical Gazette, Feb. 1838.

‡ Diseases of Children, 2d edition, 1844.

§ Lancet, vol. 1, 1845, p. 137.

and sedative we possess (in pertussis) ; it has been very extensively employed, and the evidence in its favor is very strong.*

Belladonna has been eminently useful in the epidemics of whooping cough which M. Debreyne has observed, but recourse should not be had to it until the inflammatory element has been overcome by leeches, emetics, &c.

Dr. A. T. Thompson says, I have ordered the extract of belladonna in doses of one-eighth of a grain to a child of eight years, and gradually increased the dose to a quarter of a grain. Its power over the cough is extraordinary.†

I might bring forward the testimony of many other writers, and a mass of evidence from medical practitioners, to establish still more firmly the fact of the efficacy of belladonna in this peculiar malady, but it will not, I trust, be necessary.

I will now endeavor to give an epitome of the experience of the best writers in the treatment of whooping cough by means of other agents.

The first of these which I will notice is *alum*, which has been very highly recommended by Dr. Golding Bird ; it has been employed with success by Dr. John F. Meigs, of this city, who speaks of it as follows, in his useful work on the diseases of children : “ From reading Dr. Bird’s remarks on alum, and prompted by my knowledge of its admirable qualities in the treatment of croup, I was led to make trial of it in the disease under consideration, and I believe I may say that it has exerted a more decided influence in moderating the violence of the disorder, than any remedy that I have ever made use of. I have administered it in fifteen cases, beginning in the course of the second stage.

In all it was beneficial, and in some the effects were strikingly useful, the improvement being more rapid than I had ever seen to result from other remedies.” Dr. Bird gives from two to six grains every four hours. His formula is as follows : R. Aluminis, gr. xxiv ; Ext. Conii, gr. xii ; ‡ Syrup Rhæados, ʒii ; Aquæ Aneth. f.ʒiij. M. Give a medium-sized spoonful every six hours. Dr. Meigs gives it in smaller doses, and without the Ext. Conii. To children under one year, half a grain to a grain three or four times a day ; and to those over that age, two grains every six hours.

* Elements of Materia Medica.

† London Jour. of Med., April, 1850.

‡ This is considered by Dr. Butter as *the* remedy, namely conium, for whooping cough, and he eulogizes its use.

Dr. Crossly Hall, an English physician, employs the *alum* in powder, prescribed in a little water eight times a day, and he considers it a very useful remedy.

Mr. Davis highly extols the efficacy of alum in pertussis. In the last edition of Underwood's Treatise, edited by him, he says, "After a long trial, I am disposed to attach more importance to *alum*, as a remedy in whooping cough, than to any other form of tonic or anti-spasmodic. I have often been surprised at the speed with which it arrests the severe spasmodic fits of coughing; it seems equally applicable to all ages, and almost to all conditions of the patient. The dose for an infant is two grains three times a day; and to older children four, five and up to ten grains may be given mixed with syrup and water."

I have employed *alum* both in the case of my patients and my own children, and gave it freely; it moderated the intensity of the disease, but it did not in my hands make a cure, so that, after its use, for ten days, I had to resort to the belladonna, which in a week completely checked the whoop.

Another agent which has been very highly lauded is the hydrocyanic acid, which is considered by Dr. Thompson, of London, to possess a "specific power" over the disease.

Dr. West, of London, author of a valuable treatise on the diseases of childhood, says, "that the acid sometimes exerts an almost magical influence on the cough, diminishing the frequency and severity of its paroxysms almost immediately, while, in other cases, it seems perfectly inert; and again in others, without at all diminishing the severity of the cough, it exerts its peculiar poisonous action on the system so as to render its discontinuance advisable."

He recommends it to be given by itself, diffused in a little distilled water, sweetened with simple syrup, and the dose he begins with is half a minim every six hours for a child nine months old. He has never but once, however, seen really alarming symptoms follow its use, though he has employed it in many hundred cases; still he remarks that although the severity of the cough may be relieved by the acid, it does not enable the practitioner to dispense with other remedies.

Dr. Hamilton Roe, in his treatise on whooping cough, gives to an infant three quarters of a minim of hydrocyanic acid, Scheele's strength, gradually increasing it to a minim, which is administered every four hours; for a child three years of age one minim, gradually increasing, if necessary, to a minim and a half every four hours. Dr.

Roe says he is convinced, from the result of all the trials he has made, that this drug will cure almost any case of simple whooping cough in a short time. Dr. Edwin Atlee first used it in 1824, and from that year until March, 1832, he says he has treated more than two hundred patients, and never failed to cure in from four to ten days.*

This medicine is highly recommended by Muhrbeck, Kahleiss, Volk, Heller, Granville, Lombard, &c. I have tried this acid, but it did not at all please me in its effects.

Another remedy which demands our notice is the precipitated subcarbonate of iron, (*ferri sesquioxidum*). The following observations on its use are by Dr. H. C. Lombard, of Geneva, who, after praising the virtues of *assafœtida*, flowers of zinc, opium, prussic acid and belladonna, says, "I come now to my specific, or rather to the remedy advised by Dr. Steyman, as the best anti-spasmodic in whooping cough. Dr. Steyman had advised to give from four to ten grains of subcarbonate of iron in the twenty-four hours, he gave as a rule to increase one grain for each year, so that a child six years old was to take six grains in a day, but from the beginning I found the dose quite inadequate, and I increased it to twenty-four and thirty-six grains in young children. I have given it either with water and syrup, or mixed with a cough mixture. It has never produced any inconvenience. On the contrary, I have found that all the children treated after this method were much less weakened, and recovered faster than with all other remedies. The proofs of the advantageous effects of it have been so numerous that I can scarcely enter into the detail; however, I may give a few facts to corroborate my assertion. In a child four years old I gave the subcarbonate of iron, and the fits, which in the preceding week, had been 101 in number, were reduced to 66 in the following week. In a weak and debilitated boy, aged seven years, the powder of belladonna had proved quite useless; when I tried the powder of iron, so prompt was the effect that in a few days the boy was quite cured; the sister of this boy was also cured with great rapidity. The last case of whooping cough which I have treated lately was of four months duration, and every thing had proved useless, when I gave the iron powder, which in the space of a few days succeeded in making the cough less and less.

In fact, I think I may assert with security, that the subcarbonate of iron enjoys a remarkable property to make the fits less violent, to

* Amer. Jour. Med. Sci. vol. vii. and vol. x.

diminish the number, and after a certain number of days to cure entirely the whooping cough.

It enjoys, besides, the advantage of strengthening the little patients, and gives them force to resist a complaint which sometimes lasts some weeks, and generally leaves the patients weak, low and exhausted. In some of those who have taken it, I have often seen, during the first days, a temporary increase of the cough, but it always subsided after two or three days, and did not prevent the good effects of the medicine. The beneficial results obtained by the use of the iron powder are easily explained by its anti-periodic and anti-neuralgic properties, and it shows *a posteriori* how much the whooping cough resembles a true neuralgia, or, at all events, a true nervous disease."

I have not tried this remedy, and can, therefore, give no opinion of its efficacy; but should judge from its tonic and blood-restoring properties, that it would prove a useful agent in low anæmic or debilitated cases.

Garlic is a remedy very highly recommended by Dr. Dewees; indeed, he states in his work on Diseases of Children, "that he has never employed any remedy of equal efficacy."

A child of six or seven years may begin by taking a third of a common sized clove, morning, noon and evening, in the absence of all febrile excitement, gradually increasing the dose.

Mr. Sutcliff combined the Peruvian bark with cantharides, and administered it with great success in whooping cough during twenty years.

The following is his formula :

R.	Tinct. Cort. Peruv.	f. ℥vi.
	Elix. Paregor.	℥ss.
	Tinct. Canthar.	℥i. M.

Of this mixture, small doses were given three or four times a day, gradually increasing until a slight strangury was excited, then the dose was to be diminished.

When the active symptoms have subsided, Dr. Beatty, of Dublin, used the same remedy, and it is also recommended by Dr. Graves. The following is his formula :

R.	Tinct. Cinch. Comp.	℥v.
	" Lyttæ,	
	" Camphoræ, aa.	℥ss.

M. S. A teaspoonful three times a day in flaxseed tea or barley water.

Professor Trousseau recommends the following solution of nitrate

of silver in whooping cough ; one-fifth of a grain in solution with simple syrup daily.

Cauterization by nitrate of silver has also been employed as a remedy in pertussis by Dr. Eben Watson, of Glasgow. The strength of the solution is gr. xv. to the ounce of water, applied every second day, by means of whalebone tipped with sponge, at first to the pharynx, and then to the glottis and larynx. The whole number of cases treated by M. Joubert and Dr. Watson, in 1854, were 167.

Cured in two weeks,	96	cases,	or	57.4	per cent
“ in three or four weeks,	61	“		36.5	“
Resisted the treatment,	9	“		5.3	“
Died,	1	“	or nearly	0.6	“

To prevent the irritability of the stomach, he gives frequent small doses of heavy magnesia, combined with a few grains of the tris-nitrate of bismuth. He also employs the index finger or teaspoon to make the application to the throat of children.

Nitric Acid was first recommended by Dr. Arnoldi, of Montreal, as a remedy in pertussis with much success, and it has been adopted by Dr. Gibb, of London, late of Canada, who has published a work on whooping cough, in which he has given the opinion of ninety-three physicians, in relation to its pathology, with its history, mortality, complications and causes. He has also entered into a consideration of forty-three remedies, viz. : venesection, leeches, emetics, antimonials, external applications, change of air, warm bath, hydrocyanic acid, laurel water, belladonna, opium, hemlock, henbane, digitalis, tobacco, arsenic, silver, iron, zinc, lead, copper, cauterization by nitrate of silver, inhalations, coffee, Peruvian bark, quinine, hydrochloric acid, sulphuric acid, nitric acid, cochineal, alum, tannin, vegetable acids, alkalies, vaccination, cantharides, musk, asfofetida, meadow narcissus, cup moss, castor, nux vomica, and miscellaneous remedies. He remarks that the nitric acid has succeeded over and over again when other means have failed, and it is not such a hazardous remedy, when administered with ordinary precaution, as many described by him in his work. Dr. Arnoldi's method of prescribing the acid is as follows :

“To a tumbler full of very sweet water (almost syrup), add as much acid as will bring the water to the strength of pure lemon juice, when it is ready for use ; an adult may consume this quantity in three or four hours, a child one year old may take a desert spoonful every hour.”

“He has remarked that the efficacy depends on the amount taken,

and that especially by the frequency of repetition, to save the teeth, he advises a solution of carbonate of soda, two drachms to eight ounces of water, to be used as a gargle immediately after taking the acid."

"The object entertained by Dr. Arnoldi, in using this acid as a remedy, was to introduce the elements of the atmosphere into the blood by the process of gastric digestion, so as to enable the lungs to outstand the stage of temporary asphyxia. Whether the theory be correct or not, the result, he says, of his practice has been almost universally successful." He then goes on to give the outlines of twelve cases which were treated by Dr. A. with success. The doctor met with a few cases where the disease seemed to resist the action of the acid, owing, he remarks, to "spinal torpor at the track of the eighth pair and phrenic. In these the application of an ointment of the biniodide of mercury, so as to produce the specific eruption, and this produced a second and a third time, completely restored the efficacy of the acid."

"Dr. Gibb's own cases were sixty-four in number, which are reported as cured; he combines the acid with honey or syrup, and compound tincture of cardamom, &c."

Chloroform has been employed by Dr. Fleetwood Churchill, as a specific remedy in whooping cough in four cases which he reports; in two of these the whoop ceased in two days; in the third case it required its use for three weeks; in his fourth case the patient had to resort to the use of Prussic acid to complete the cure.

"In the case of young children he drops thirty drops on the palm of the hand, the mother to hold this before the mouth and nose of the child, sufficiently near to inhale it fully, but not so close as to exclude a portion of atmospheric air. The best time to begin is just as the patient feels the irritation in the chest increased to a cough.

Still he considers it more suitable for young persons of twelve or fourteen years old and upward. Two successful cases have come under my notice; the method was by placing a small portion of chloroform in a vial, and when feeling the inclination to cough, to inhale by removing the cork, the small bottle being carried in the pocket."

Before concluding my remarks upon the treatment of this disease, I must not neglect to state the great importance attached by some authorities to a change of air in the last stage, or the debility which results from it. Dr. Lombard remarks, that "in many cases which

had baffled all attempts to stop the cough, a change of air has accomplished the cure. I have found it equally indifferent to go out of town, or to come into town, provided there be a change; and even in the short distance of half a mile, I have seen the good effects of this plan of treatment." Dr. West, of London, says, that change of air with the use of alum during the last stage, generally expedites the cure." According to Dr. Gregory, change of air after severe and protracted cases is the only thing that will give the patient a chance of recovery.

Billard states "that goat's milk, pure or diluted, a good nurse, a residence in the country, particularly in the spring and summer, will materially conduce to the recovery of infants at the breast."

But nothing can be more pernicious than the exposure of children suffering from whooping cough, to cold or inclement weather, for it will bring back the cough and cause inflammation of the lungs.—*Medical Examiner*.

Remarkable Case of Gun-shot Wound of the Head. By H. V. M. MILLER, M.D., Prof. of Physiology and Pathological Anatomy in the Medical College of Georgia.

A stout young negro man, about twenty years old, was shot in the head, on the 31st of March, by the accidental discharge of a pistol. The ball entered the cranium one inch above the right eye, at a point corresponding to the middle of the right hemisphere of the brain. The boy instantly fell from a table on which he was sitting when he received the injury. Half an hour afterwards, when I saw him, he was unable to speak or move, and was breathing slowly and heavily. Upon removing the scalp, where the ball had entered, with a view to the use of the trephine, if necessary, it was discovered that the ball had divided, about one-fourth of it being found near the margin of the fracture, while the remainder had made a clean cut through both tables of the skull, and plunged deeply into the substance of the brain. The hole made by it readily admitted the little finger, and from it was freely discharged blood and broken down cerebral matter. The probe was passed some distance along the tract of the ball, but its exact position could not be ascertained, without danger of still greater laceration of an important and delicate organ. During the examina-

tion and dressing of the wound, the boy evinced sensibility and imperfect consciousness.

The following notes of the case, taken at my request, by a medical friend, will sufficiently detail its further history :

April 1st. Last night the boy suffered some pain, but enjoyed intervals of interrupted slumber. This morning reaction has supervened : he has a full pulse, 80 to the minute ; bled several ounces—pulse reduced to 75. Cold water dressing, which had been first applied, was continued. 12 o'clock.—Pulse again full and frequent, as before ; bled a second time, with like effect. This afternoon his intellect is perfect ; speaks without difficulty, complains but little, and gives a satisfactory account of the way in which the accident occurred, and of his position when shot—in fact, remembers every circumstance, both before and after the injury. He is unable to move his right arm, or his under jaw ; the left arm he moves with some difficulty, and the lower extremities perfectly. Drinks water and gruel, through a quill, with great ease.

April 2d. Bowels confined. Ordered a mild purgative, and, subsequently, an enema, which operated freely during the afternoon. Extremities cold for two hours before the action of the medicine ; but after it, quickly regained their natural temperature ; pulse 70.

April 3d. Rested well during the night ; has very little pain ; takes his gruel with decided relish, and is perfectly rational. Slippery elm poultice applied to favor suppuration ; pulse 68.

April 4th. Slept well ; pulse 66 ; appetite good ; external wound discharging ; bowels moved during the afternoon. 6 o'clock p. m.—No discharge from within the cranium ; pulse 72.

April 5th. Uneasy and sleepless last night. The hole in the skull found plugged with clotted blood, upon removing which, pus and broken down cerebral matter escaped freely ; after which, the uneasiness subsided, and the pulse sank to 66.

April 6th. Slept well ; pulse 65, soft and natural ; wound discharging freely ; appetite good ; perfectly rational.

April 7th. Passed a good night ; symptoms the same as yesterday.

April 8th, 9th and 10th. No material change in the treatment or symptoms, except that the skin of the upper half of the body became *exceedingly sensitive*, the slightest touch of the hand, or even of the covering, producing exquisite suffering. The paralysis of the left arm is something greater, though he is still able to grasp an object with the hand and move the arm slightly.

April 11th. Complains of pain in the head—bowels confined for forty-eight hours. Ordered purgative. 6 o'clock p.m. Medicine has not acted; pain in the head continues; pulse 86.

April 12th. Bowels moved during the night. Still complains of pain in the head, and great tenderness of the surface of the body, when aroused; but there is evident tendency to coma; pulse 90. 6 o'clock p.m. Pulse 108. Since noon to-day he has not spoken, but seems to recognize those who address him, and to understand what is said to him. The stupor gradually deepened until midnight, when he died.

The following is the account of the post-mortem examination, made, twelve hours after death, by Drs. T. J. and R. C. Word:—"The anterior half of the cranium was removed on a level with the eyebrows. On dissecting the scalp from the cranium, we observed an ecchymosed spot at the upper part of the left temporal fossa. On removing the cranium, we found that the ball had passed in an oblique direction downwards and backwards, through the right anterior lobe of the brain, into, and through the left lobe, and had lodged against the inferior angle of the parietal bone, driving in the inner table of it, and fracturing the outer, at a point corresponding with the ecchymosed spot which we had observed on the pericranium. The distance traversed by the ball was, by actual measurement, four inches.

"The surface of the anterior half of the right lobe presented spots of congestion, but there was not much discoloration of the substances of it.

"The anterior two-thirds of the left lobe, especially the membranes, presented a dark livid appearance. Along the tract of the ball the substance of the brain was broken down and softened. The left lateral ventricle contained some semi-purulent fluid, tinged with blood, a very little, was also found, in the right."

The interesting features of the above case, in both a surgical and physiological point of view, will so readily occur to the reader as to render unnecessary an extended commentary.

That patients sometimes live for days, and even recover, after severe injuries and frightful wounds of the brain, is a fact, well known to the profession. Generally, however, such wounds are inflicted by cutting instruments, as the sabre, or are made in such manner as to leave no foreign substance within the cranium—or, if made by a projectile, in all the cases which I can at present call to mind, only one hemisphere of the brain had been injured. Barron Larrey relates

the case of a soldier, wounded during an insurrection in Cairo, in which the ball entered the frontal sinus, passed to the occipital suture, and was extracted from thence by means of the trephine. This man recovered ; but as it is expressly stated that the ball pursued the direct course of the longitudinal sinus, and its position was determined by passing an elastic bougie along that sinus, the presumption is, that neither hemisphere of the brain was wounded, at least, to any very great extent. Many cases are recorded, in which life was prolonged after gun-shot and other wounds of a single hemisphere ; but that a man would live so many days, after both hemispheres of the brain had been traversed four inches by a pistol ball, is a most interesting, if not unique, surgical fact.

It is not less wonderful, that so extensive a wound, implicating that portion of the cerebrum which is supposed to be specially concerned in the intellectual operations, should not have produced disturbance of some of the mental faculties. Up to the twelfth day, the mind was as perfect in all its parts as if no injury had been received, thus setting at defiance both phrenological and physiological laws.

The peculiarities of the partial paralysis, though not clearly explicable upon received physiological principles, are infinitely more so than the exalted nervous sensibility of the surface of the body which constituted so prominent and troublesome a feature of the case.

However tempting the occasion, I do not propose to append to this history any speculations of my own, but simply to submit it to the consideration of the profession.

Medical Matters in Berlin.

BERLIN, June 19, 1855.

My Dear Sir : It will not, I think, be uninteresting to many of your readers to give a few particulars in regard to the expenses of living in the Prussian capital. I have been here long enough to judge pretty accurately in regard to this point. As far as I can see, the cost of living is by no means so extravagantly low as many imagine. Every favor that one asks must be paid for, and it is only the opportunity which one has to be isolated, and to be independent in his mode of life, that enables him to live more cheaply here than in America. And the fact of being a foreigner, will always involve one in some extra expenses.

The students all live in furnished rooms near the clinics and hospitals. These are let to them for about four or five American dollars a month. The expenses of the table are altogether variable. They must depend upon the habits of each person. I find that two American dollars a week is rather a high average in this respect. Every thing like clothes is fabulously low. A nice dress overcoat is but fourteen dollars, a hat a couple of dollars, and a pair of kid gloves perhaps half a dollar. All incidental articles are about two-thirds of the American value, though such expenses are more numerous here than with us. Books have the same value in both countries. Altogether, as far as I can judge, the physician who comes here to spend a year or year and a half in study, may save enough in the cheaper mode of life, to balance the cost of his passage out and back in a sailing vessel. In this case, he must live as all students do, for hotel life in Europe is much more expensive.

The question of acquiring the German language is important to one desiring to spend a long time here in studying. To be sure, many of the professors are able to converse fluently in English, and one-half of the shopkeepers on the chief street have a smattering of it; still one can by no means appreciate the facilities of the place, without a knowledge of the language, or the company of a German friend. To one who speaks French, many of the private courses of instruction are valuable.

One of the most pleasant occupations for the foreign physician here is to visit the various hospitals and collect what random information he may upon the spot. An acquaintance with the internes affords one an opportunity to do this as often as he pleases.

I have but just returned from a walk through some of the surgical wards of the Charité. What strikes one at first here, is the entire absence of splints. In fractures of every kind, wooden apparatus is entirely discarded. In place of it, gypsum bandages are used. These are like our starch bandages. The cloth is prepared in the gypsum and dipped into water when used. Even in fractures of the femur, they are the only dressing. They are put on over a thin layer of flannel, so as not to adhere to the skin, and as the swelling of a part goes down, a new set of the gypsum strips are applied. The custom at this hospital is to leave a patient, say a week, without a bandage, and then in time to anticipate union, the plaster casing is fixed upon the limb.

Dr. Langenbeck goes upon the same principle, not favoring splints, but uses the starch bandages instead of gypsum, and puts them on at

once. He says that this mode of dressing has always proved favorable in his hands. All swelling is kept down, and a speedy cure results. The tightness of the bandage is by no means painful, while the great point in the management of fractures, muscular compression, is admirably answered. The parts below the injury are, of course, always to be tightly wound, at the same time as the portion of the limb at the seat of the fracture. As the bandage loosens, it must at once be replaced.

I saw a case in the Charité to-day of a boy with a fracture of both fibula and tibia, of five weeks' standing, where he was walking round upon the fractured limb very well by the aid of a cane.

This mode of practice is not regarded so favorably in England as upon the continent. It has superseded all others in the large German hospitals. In St. Petersburg it has also been adopted. I dwell at length upon it, because it seems to be a vast improvement in the majority of cases in which wooden splints are now used. It is of no trouble as regards transportation, it can be made as thick or light as is desired, and is applicable at sea, in the camp, and in fact everywhere. Sir James Ballingall, in his excellent work upon Military Surgery, speaks in the highest terms of this class of dressings.

The history of the gypsum bandage is European. It was first brought before the profession by Vander Loo, a Dutch surgeon; and the first article of importance in regard to it was published in the *Vienna Weekly Journal of Medicine and Surgery*. It was made the subject of a report to the Imperial Austrian Academy. The dressing has been modified in one particular by Pirogoff, Professor of Surgery at St. Petersburg. This is merely to employ old linen and cotton clothes for the substance of the bandages. The modification arose from Prof. P.'s visit to the Crimea lately, to inquire into the condition of the Russian army hospitals there, and is, of course, only a point of economy.

One of the greatest hobbies here is the "Chamomile Tea Bath." The victim of this treatment must sit up to his chin in hot chamomile decoction, or allow a portion of his body to lie in it for hours after hours. The cases in which it is used are inflammation of the cellular tissue, new wounds where gangrene is feared, in poorly vitalized parts, and in cases of frost bite, either before or after an operation. This mode of treatment is clumsy, to be sure, but really seems most excellent in its results.

In erysipelas of the face, cotton batting is lightly wrapped upon it. The object is probably as much as anything to promote a healthy perspiration, and thus restore the skin to its natural functions.

I have noticed here in fractures of the clavicle the dressings are far behind the day. Undoubtedly many cases of this accident get along just as well without as with a dressing. But where one pretends to apply a series of straps to answer the three directions of upwards, backwards and outwards, and really fulfils neither of them, it is worse than useless. They don't seem to have any idea of Fox's apparatus, and I saw three cases to-day dressed without any kind of axillary pad.

In the several wards, Zitman's Decoction is quite in vogue. I don't know just how the ingredients are combined in the German preparation. The substances used are the same as stated in a note to the U. S. Dispensatory. The patient undergoes a sweat, and while in bed the mixture is drank.

The house surgeons and assistants in the Charité, and indeed in nearly all the Prussian hospitals, are young medical men from the army. They are detailed round to different stations, so as to improve themselves by hospital practice for the benefit of the army afterwards. This is what gives character to the medical corps of continental forces. Each man has undergone a most rigid experience in this way.

Dr. Langenbeck's clinic has been lately rich in cases of ankylosis. In no other place in the world is such attention paid to this class of malformations. Wherever anything can be done to restore the action of a joint, it is pretty certain to be tried. Subcutaneous tenotomy and boring into joints are of daily occurrence. Patients are placed under the influence of chloroform, and if necessary, the greatest force is applied to produce some movement. In a great majority of the cases thus treated, the limbs gradually recover their natural appearance, though it is doubtful whether the whole of this kind of practice is commendable. Good joints may result oftentimes at the expense of life. The opinion of Dr. Mott long ago expressed is, after all, the safest. A person had better have an awkward leg or arm, than undergo the risk of such violent treatment.

In a case of malignant disease of the scapula, the whole was extirpated, with the outer portion of the clavicle and head of the humerus. The patient, a lad of fourteen years, suffered much from the loss of blood, and will probably not recover. It was, however, his only chance of life. Dr. Langenbeck has already performed this operation three times with ill success in all. It must be very rare to find a person whose constitution is such, when this operation can be called for, as to insure his recovery afterwards.

Speaking of these capital operations, Dr. L. has excised the head of the femur with amputation, in all seven times. Five cases of the seven have died. He has made the hypogastric section. These statistics may be interesting to your surgical readers.

I have had the misfortune to have seen the practical treatment of acute rheumatism here under rather unhappy circumstances, and also to acquire an insight into the interior management of a German hospital. An American physician, Dr. Henry P. Bostwick, of Bridgeport, Connecticut, on his way to St. Petersburg, was seized with a very severe attack upon his voyage, and will hardly go on for some weeks to come. Twenty-four American physicians have now gone to the Crimea. I wish that a word expressed in your Journal would do any good in persuading our young medical men at home that the prospect there is really anything but encouraging, without one is qualified for the greatest physical trials, and for continual embarrassment from an ignorance of the language.

But to acute rheumatism. The treatment here is almost identical with ours. Depletion by blood-letting, if deemed necessary, anodynes, blisters, if necessary, over the heart, and mercury, if demanded by any internal complications. The usual specifics are also used, and the inflamed joints are treated hydropathically. Wet flannel is wound round lightly and covered with oil silk, to prevent evaporation.

I had hoped to have given your readers a word in regard to the great Anatomical Museum at Berlin, but must defer that and other matters to my next letter.

N. E. GAGE.

—*New Hampshire Journal of Medicine.*

Treatment of Fistula In Ano. By T. R. MITCHELL, M.D., F.R.C.S.I.

I am anxious to direct the notice of the profession to a modification of treatment in the cure of fistula in ano. It is, I believe, an established axiom that in all cases it is necessary to divide the sphincter ani muscle, the usual operation consisting of the introduction of a probe-pointed bistoury as far up as the sinus extends. Others recommended the mere division of the sphincter in a lower situation. Whichever operation is performed, the result is very often a relaxed state of the sphincter for some time afterwards.

In a case on which I operated twelve months ago, the gentleman had considerable difficulty in retaining the bowel up, particularly after violent exercise or defecation. In this case I found that the fibres of the sphincter ani were much relaxed, so much so as to allow the rectum to protrude for several inches, so as very closely to resemble a prolapsed uterus. The constitution began to suffer from the constant discharges of muco-purulent matter, and he was quite incapacitated from following his employment. Having previously emptied the rectum by an aperient, I directed him to force down as much as possible, and then proceeded to touch the tumor with strong nitric acid ; this was done with a piece of thin wood, four stripes extending from the upper part of the tumor to the sphincter being made on the surface ; the part was then smeared well over with oil, and returned. The operation required to be repeated at the end of ten days, when only about two inches of the rectum could be forced down, and he has since then been able to go about his employment without the slightest inconvenience.

The profession are indebted to the late Dr. Houston of Dublin for the introduction of nitric acid in the treatment of vascular tumors of the rectum, many cases of its successful employment being given by him in the twenty-third volume of the *Dublin Journal of Medical Science*.

Since the above case was treated, I have had several of a similar nature, and the result has been the same. It would therefore be unpardonable in me to enlarge further on the subject, particularly as a similar treatment has been adopted very extensively by other surgeons, and is well known to the profession. It, however, struck me that if, instead of the great relaxation of the sphincter which so frequently follows its division, we could cause a constriction as great or nearly so as before the operation, we should be doing good service. Now this I think may be accomplished by a very simple method—employing the nitric acid before the relaxation takes place, or prior to any protrusion ; and the plan I adopt, and which I have hitherto found very successful, is to apply the strong nitric acid around the margins of the sphincter ani which have been divided, and this I do on the fourth day after the operation ; the pain of its application is quickly removed by smearing the parts over with oil, and it is only necessary to apply it twice.

Before concluding these remarks, I wish to state that I have found patients laboring under diseases of the rectum particularly difficult to get under the influence of chloroform, and have found the process

much facilitated by employing it locally as well as by inspiration, as I have found the parts excessively sensitive even when the patient has apparently been fully under its influence, and when pricking or pinching was unheeded. This, I think, may be easily explained by the fact of the patient's sufferings having been for some time directed to the part, and to the nerves being in a highly sensitive condition.—*Lancet*.

The Physiology of the Different Varieties of Paralysis. BY MARSHALL HALL, M. D., F. R. S., London. (Read before the Institute of France, Academy of Sciences).

As there are two principal nervous centres, the brain and the spinal cord, so there are two great classes of paralysies, according as the influence of the brain or spinal system is intercepted or annihilated.

I denominate cases belonging to the first class, in which the palsied parts are deprived of the influence of the brain, *cerebral paralysis*. Cases in which the influence of the spinal cord is intercepted from any second class, *spinal paralysis*. I do not mean to imply by these terms that there are, in these cases respectively, lesions of the encephalon or spinal cord, but simply that by some disease or injury the influence of these organs is abolished, so far as the muscles of the palsied limbs are concerned. Hemiplegia is ordinarily a cerebral paralysis; but in some cases, a spinal paralysis also; whereas disease limited to a small part of the dorsal segment of the cord produces a *cerebral paralysis* of the lower extremities; the influence of the portion of spinal cord below the seat of disease continuing to reach the palsied limbs. The destruction of a considerable portion of the spinal cord, or a suspension or annihilation of the functions of the spinal cord produces a spinal paralysis.

A cerebral paralysis, I repeat, is one in which the muscles are deprived of the influence of the brain; a spinal paralysis, one in which the muscles are deprived of the influence of the spinal cord.

Facial hemiplegia is a cerebral paralysis; paralysis of the facial nerve is a spinal paralysis. The distinctive characteristics of these two classes of palsies are as follows:

In cerebral paralysis, the influence of the will is alone interrupted. When this paralysis is complete, voluntary movements are abolished.

All the functions depending on the medulla oblongata and spinal cord persist. We have, in different cases :

1. Emotional movements ;
2. Movements connected with yawning, coughing, etc. ;
3. Diastolic movements ;
4. Tonic symmetrical contractions of the hands ;
5. Comparative increase in the irritability of Haller ;
6. Comparative increase in susceptibility to the action of strychnia.

In spinal paralysis, the four species of movements above enumerated are not observed, and the Hallerian irritability is comparatively less.

I return to cases of hemiplegia. In most cases, shortly after the attack, there is somewhat of an amelioration, a partial return of voluntary power ; the phenomena I have mentioned are manifested also. In other cases there is no amelioration ; the phenomena adverted to are absent or scarcely perceptible. There are no tonic spasms of the hand and arm ; the Hallerian irritability is not augmented. It might be said that such cases were exceptions to the rules I have laid down. The truth is, it appears to me, that, in such instances, the shock of the attack has been sufficient to destroy, so to speak, the nervous power of the spinal system. Thus, when we divide the spinal marrow of the frog from the brain by an incision, we suspend nervous power, so as to abolish diastolic movements. A yet more violent shock, as a stroke of lightning, would annihilate it altogether.

These phenomena are objects of pure observation, excepting that relating to irritability. To test this function of the muscular fibre, I have experimented on various occasions, with the aid of galvanism, and repeated my experiments with every precaution.

I made use of a simple galvanic current, produced by a Cruikshank machine. I placed a palsied and a sound hand, for example, in the same basin of pure water, and the feet in another, and carefully observed which was affected by the slightest degree of galvanism. I found that in cerebral paralysis, the palsied limb is most susceptible of galvanic excitation ; whereas in spinal paralysis, the palsied limb is less susceptible than the sound one.

I deduce from these experiments many conclusions of interest, both to the physiologist and the physician.

1. That the brain, by its acts of volition, tends to exhaust muscular irritability.
2. That the spinal marrow, on the contrary, is the source of this irritability.

3. That galvanism will serve to diagnosticate between cerebral paralysis and spinal paralysis.

The phenomena I have already enumerated : yawning, the effects of emotion, diastolic movements, symmetrical tonic spasms, the effects of strychnia, etc.

Besides cerebral and spinal paralysis, there are nervous affections connected with the medulla oblongata and pneumogastric nerves, which I propose to discuss on a future occasion, as well as the diseases of the ganglionic system.

Lastly, to complete our enumeration of paralysies, there remain several varieties of palsy that are exceedingly obscure ; paralysis *cum agitatione* ; paralysies *e plumbo*, *e rheumatismo*, *ex hysteria*, *e dentitione*, etc. Much labor is requisite before we can form clear ideas on these diseases. Emotions, spinal irritation, the action of poisons, the influence of pain, the effect of shock ; what a field for study.—*Virginia Med. and Surg. Jour.*

Medical Education. By JOHN LOCHE CHANDLER, M.D., St. Albans, Vermont.

"Non ignara mali, miseris succurrere disco."

The plain English of my motto may be thus rendered—My early training in classical and scientific studies was almost nothing. Of the dead languages I am profoundly ignorant, with the exception of Latin of which I know very little. Of living languages I am equally ignorant, with the exception of my mother-tongue ; and even for the little skill I may claim in this, I find myself largely indebted to my superficial knowledge of Latin, a language I cannot read understandingly, even with the help of a dictionary. Of mathematics and philosophy, with all their dependencies, and natural history, I was utterly ignorant, when I most needed them as indispensable aids to the study of my profession. My acquirements in all these are yet so meagre, that in considering to what departments I may be most indebted for the little I have attained, I find myself too ignorant to determine. I simply know that numbers, magnitude, and their relations, are to be investigated and understood by the application of certain rules, or tests ; but what these are exactly, or what they should be called, I know not. With the exception of some familiarity with a few En-

glish Essayists, and Dramatists, and a little acquaintance with an ancient volume of Ethics, written by savans, of whom Isaiah, David, and Luke, a physician, are examples, such was my own preparation for entering on the study of medicine. "Fools rush in, where angels fear to tread."

So much for my "*non ignarus mali*;" and the plainness with which I have most truthfully stated it I trust will be tolerated, for the sake of enforcing more effectually on *such younger members of the profession*, as may need it, and who are not yet past hope, no less than are *medical students*, a just estimate of the importance of *preliminary* facilities, for acquiring a knowledge of medicine. Being myself well qualified to *feel* their indispensable necessity, "*miseris succurrere disco*," which probably means, not liking my companionship, I would gladly rid myself of my fellow occupants, by helping them out of the ditch, upon my own shoulder. If *scholarly* readers choose to call my rendering of the passage a *free translation*, they can retire. I did not call their attention. *We* understand each other; that is, the "late-caught rustics" and myself, unscourged of birch, and unredolent of midnight oil, who are to consider these my lucubrations. Before they retire, however, let us do ourselves the justice, we, "the late-caught," to apprise them of our mindfulness, that their parchment vouchers are but circumstantial evidence; that unconned lessons are sometimes *recited*, and that unused brains come to be little better than no brains.

Having the field exclusively to ourselves, let me warn you, confidentially, against yielding any vantage-ground, (we have little enough,) by presuming too much on the indolence of the enemy. The parchment-men have resources at their command that enable them, with comparative ease, to achieve that which costs us protracted, and sometimes fruitless toil; and though we are often tempted to undervalue the prowess of an educated competitor, from the fact of his palpable indolence and inattention to medical studies, emergencies frequently occur, which confound and put us to shame, by the demonstration of his superior tact in diagnosis; his deeper and more just conceptions of pathology; and his more enlightened views of therapeutic agencies. Whence comes all this? We have, perhaps, long observed his indolent habits, and have seldom, if ever, witnessed his exhibition of intellectual activity or force; while we are conscious ourselves of diligence and effort of professional inquiries. It unquestionably comes of early training in the preliminary studies, which are essential aids to the effective study of medicine; no less, perhaps, than of systematic training in the principles of medicine itself. With equal natural en-

dowments, with habits of application, comparatively indolent, our competitor will long eclipse us, in the estimation of intelligent observers; so long, indeed, that most of us will tire of emulating the perseverance of the tortoise, in his fabled race with the hare. Such a race is, indeed, a hard one, and victory even, seems an inadequate reward for a life of hardship and self-denial. But the victory is sure, nevertheless; sure to those who will run diligently, and for whose benefit I am thus exposing my own deficiencies, and, perhaps, making myself ridiculous; not sure to those who, like myself, defer their efforts to repair the evils of a deficient education till they are fifty years old; and hopeless, if even after this late repentance, they suffer, like myself, long intervals of sottish indolence to intervene. With such, docility has not yet become an incompatibility; age has not benumbed their faculties with its petrifications; they are yet in the early years of professional life; or better still, within the precincts of medical pupilage. To all such, having fair capacities, and who will work heartily in their calling, the future promises all that is honorable or desirable.

Two examples occur to me which I cannot deny myself the pleasure of exhibiting, as forcible illustrations of the power of indomitable purpose to overcome obstacles, apparently insuperable, in the path to usefulness and just professional distinction. They are both furnished in the history of two medical students, pupils of my father, the late Dr. Benjamin Chandler; who was quick to discover and appreciate talent, and watched its developments with the gusto of an epicure. The first of these presented himself to my father, an entire stranger, in the rough garb of a backwoodsman, announcing his wish to commence the study of medicine forthwith. It was the custom of country physicians, in those early days, to receive pupils, boarding, and sometimes even clothing them, trusting to their future professional success for remuneration. He signified his wish to discharge his pecuniary obligations, as they accrued, by his daily labor on the farm, or in any other employment my father might furnish. He had traveled some thirty miles on foot, from a new settlement among the mountains, where he was reared, and where his ardor in the pursuit of knowledge must have been kindled. Yet his training had been all effected in the rough and brief terms of the district schools of that pioneer period, and mountainous region, usually taught and sustained by backwoodsmen themselves. His bearing was indicative of intelligence and good sense; of solidity, rather than of brilliancy. My father acceded to his terms at once. It was during my own pupilage; and though the only

advantage I could claim over him was a superficial smattering of Latin, I affected profound amazement at his temerity, in presuming to enter on the study of medicine with so little preparation ; especially with the drawbacks on his time, by the undignified employment of "his own hands," in catering for his daily support. My father replied to this sage announcement of my sentiments toward my fellow pupil, that I should soon be relieved from the burden of such regrets, by finding myself amply employed in following, at a respectful distance, my fellow student's lead in the acquisition of knowledge. My impartial and sagacious father's prediction was ruefully verified. With no special claims to genius, he had intellectual strength, and an iron will, to do what he purposed; the true secret, no doubt, of success in every department of human pursuit. His work, was to diligently study and understand the elementary books in medicine, prescribed by his preceptor; his pastime, the entire fulfillment of his contract with my father; leaving him still many fragments of time, which were successfully appropriated in gleaning items of knowledge, from every department which could either directly or indirectly facilitate the study of his profession. He is now an eminent, if not the most distinguished physician in a distant state; has been, I think, chairman on an important committee of our National Medical Association; at least, wrote the report of that committee, which was published in the Transactions of the Association, and has given a volume to the profession which will be read and valued, long after his old chum is forgotten.

The late Dr. William Beaumont, of St. Louis, long distinguished as a surgeon in the army of the United States, and still more for his remarkable experiments and researches on the digestive function, was also the pupil of my father; of whom he was justly proud, and confidently predicted his future eminence in the profession. Dr. Beaumont also entered on the study of medicine under many disadvantages. He commenced somewhat later in life than is usual, and in addition to considerable deficiency in preliminary acquirements, labored under so great a degree of *deafness*, that serious apprehensions were entertained of its proving an insuperable obstacle to professional success. His own just estimate of these disadvantages may have given force and permanence to his efforts, working out, possibly, a higher grade of professional character, than would otherwise have been attained. The first years of his professional life were also consecrated, with rigid fidelity, to acquisition in such departments of science as he most needed; resulting in his early elevation to high rank in his profession, and ultimately leaving hundreds of his diplomated competitors immeasurably behind him.

For the deeper discoveries and the graver contributions to medical science, the profession must ever be mainly indebted to those who are fitted by *early* discipline, for vigorous and accurate thought. The analogies between physical and intellectual training are not mere matters of fancy, but have their foundation in truth. The country Jonathan, from his very childhood wedded to his donkey, his plough and his hoe, who covets no better pastime than a splinter of pine with his jack-knife, is not to be lightly esteemed. His individual service to his fellow men, who are nourished by the bread he produces, entitles him to no unenviable rank, as a public benefactor. But Jonathan may unwisely tire of his honorable employment, and choose to see the world. Some doggerel about "the wide, wide sea," may have caught his ear, and awakened a long dormant propensity; and he makes the sage discovery that he has "mistaken his mission;" that he has wasted long years in furrowing his father's acres, when he should have been ploughing "the mighty deep." His stripling brother, whose intellectual and physical capacities merely equal his own at the same age, catches the infection, and leaving the paternal hearth, and its genial pursuits, they enter together on the training which is to fit them for the duties, the endurance, and the dangers of a sailor's life. The stripling begins with the cabin-boy's berth, and Jonathan goes before the mast.

Their first essays in seamanship may be quite satisfactory. The lusty "yeo-heave" is, perhaps, not ill adapted to Jonathan's sturdy arm, well braced and consolidated by many a jerk and tug at the plough-tail. The flexile muscle and youthful alacrity of the stripling fit him for the labyrinth of the cabin-boy's duty. But ere long, the hand of Jonathan, moulded and hardened to the plough-tail, finds itself undocile in handling "the ropes." There are dizzy heights among the "masts," which are not only to be gained, but maintained. But "the *top* of his ambition" wobbles suspiciously. The unpliant muscle, staid and stark with its adaptations to the plough-tail and the rugged furrow, takes its lessons in agility hardly; the feet refuse to cling, and the fingers to twine, in their unwonted work. Jonathan looks upon the matter, however, as a sort of legerdemain, to be acquired by some mysterious method, which, no doubt, he shall master in due time, and he returns to his "yeo-heave" with redoubled energy; till his shipmates admit that his "yeo-heave" is unsurpassed, and he regards it himself, as the sum of seamanship. His comrades wink knowingly, or jeer, as he bestrides his hobby, whether in tempest or calm, nearing breakers, or in a clear sea; yet the incontrovertible fact

that a good "yeo-heave" is an indispensable item in navigation, has secured his position as a sailor; and though he sports his tarpaulin unjauntily, he wears it with impunity.

Meantime the stripling's pliant fingers have become familiar with "the ropes;" his agile limbs and clear eye have been put in requisition, till he is at home and at ease, at every point in his "good ship," from mast-head to hold. His "yeo-heave" may be inferior to Jonathan's, but he wears his tarpaulin with unconscious jauntiness. On the next encounter of tempest and breakers, it would be no matter of surprise if the tug of Jonathan's sturdy arm, reinforced even with the "yeo-heave," should have less influence on the ship's course, than the agility, adroitness, precision and power, which is sure to characterize the stripling's execution of orders, in all emergencies.

"The crampy shackles of the plough-boy's walk
Tie the small muscles, when he strives to talk."

If disuse, or inappropriate adaptation in early life, disqualifies the tongue and its associate organs for the euphonies of an easy "enunciation," will "the late-caught rustic" and his intellectual faculties be any less encumbered with "shackles?" Will not these, also, have become too obdurate and intractable, by disuse, or perversion, for the purposes of effective, accurate thought; pliancy being no less important to its objects, than strength?

Let us follow Jonathan and the stripling in another direction. Instead of the doggerel about the "sea," some prating Siren may have gained their ears with high-flown jargon about "the godlike apprehension of man! how noble in reason! how infinite in faculties!" Man's physical dignity and importance is dwarfed at a blow; hand-craft is banished in disgrace, and head-craft becomes the cynosure. Alas! for Jonathan. ("Et quoram pars magna fui." *Sub rosa.*) His flagging and baffled intellect, galled with its yoke, and wincing with the pressure, may covet, when too late, honorable release from its responsibilities, and yearn for the jilted plough-tail, where it reposed in happy contemplation of the well-turned furrow, and its grateful returns. The stripling has also tasted the Siren's heady cup, and the learned professions constitute the domain, where the future obelisk is already rising, in the dim distance, for the inscription of their own names and deeds! But in what department shall it tower? The stripling dreams of the Bar, the Bench, and the Senate, where he is to distance all competitors, and captivate every auditor! Jonathan leans to the sagacious and the profound; and already, in anticipation,

nods his gracious acknowledgment to his deferential admirers. And what should shadow forth the grand ideal of his aspirations, if not the mysteries of Physic? The stripling's eloquence succumbs to Jonathan's wisdom, and they seek the field of medicine, but by different routes: the one, apparently direct—the other, circuitous.

Jonathan, though not *in the sere*, is "bearded like the pard," and consequently must spurn the milk by which unfledged striplings are nourished into manhood. He enters at once upon the intricacies of organization and functions; of general, descriptive, and pathological anatomy; but the very words in which structure, form, relation, function, and derangement are described, or defined, have an import which his own knowledge of language is inadequate to comprehend, and which no lexical expedient, within his reach, can help him to make clear. The originals of the figures, and examples, and processes, by which these are illustrated, belong to matters wholly beyond the range of his former inquiries; and even in mere descriptive anatomy, the definite force and clearness of the text is half lost to him. Jonathan marvels! But he ponders till he finds himself greatly comforted with the discovery that *the books* are the mere vestibule, the labyrinth of dark and winding passages, through which he is to grope for the *abracadabra*, the cabalistic key, which unlocks the great temple of medical science at once, and reveals all its mysteries, in full blaze. He resumes his courage, and encounters therapeutics. But here he is somewhat disappointed. Nature has comparatively so much, and art so little to do, in the prevention and cure of disease, that he almost takes it as a personal affront, and infringement on his own expected prerogative, and he regards Mistress Medicatrix, rather as a rival than a coadjutor. He inwardly thanks Heaven, however, that medicine is not wholly transcendental; that potions, pills, and powders, are veritable things, that can be tasted, touched, and handled, and he will triumphantly demonstrate that they can be swallowed.

Perhaps he may aspire to the honor of graduation in some metropolitan school of medicine? We might doubt his success; but the diploma will be forthcoming; for though his recitations may halt, and his thesis be a proxy, his *purse* is replenished from his father's acres. It will long remain a problem, whether his sojourn at the metropolis is for the better or the worse. The mind of the merest dullard doubtless, must feel the touch of intelligence from an attendance for months, on the instructions and demonstrations of the lecture-room, the dispensary, and the hospital. The principles of

medicine, however, can no more be rightly taught, or apprehended, without certain prerequisites, than the philosophy of language and the graces of style can be taught or apprehended, without the previous knowledge of letters and words. His great deficiency in these preliminaries must of necessity result in his acquisition of superficial details, rather than principles. His pretension will outstrip even, his attainment in these, till it merges in temerity, and thus becomes all the more dangerous. Principles are the *ballast* of our imperfect *craft*; but temerity will stretch its canvas to the gale, inversely with its amount of deposit in the *hold*.

Jonathan is diplomated, and takes his place in the profession, where, to do him justice, he sometimes deserves his success, in supplanting a competitor of still more exceptionable claims. But what are his characteristics as a physician? Instead of delving the mine for ore, he traverses the surface, and is ever adding to his hoard of gathered trifles, the shapeless bricks and curious implements, which sound experience has already tested, and cast away as worthless. In the exercise of his professional function, instead of considering attentively the known laws of the animal economy, and quietly seeking for the evidence and nature of their disturbance, he hurries at once, from expedient to expedient; peers furtively, hither and thither, for *remedies*, all unconscious the while, that the *ailment* to which he ministers is yet a *terra incognita*, in his own mind; and blind to the palpable absurdity of fabricating means, without the knowledge of ends. Hobbies in medicine, unfortunately, are more abundant, and more abundant and mischievous, than in navigation. If Jonathan the sailor bestrided his hobby on every emergency at sea, it will be no marvel if Jonathan the Doctor, should mount his "yeo-heave," for a steeple chase in medicine. It is no common continence that can refrain, when conscious impotence quails before pressing emergency. The windy jade, invitingly caparisoned, the very stirrup swaying as if by magic, to the fitting foot, may, under like circumstances, prove a sore temptation to us. It ill becomes us to scoff, while Jonathan rides. No doubt, he will improve. Intercourse with intelligent men, and familiarity with the practice of others will gain him the endurance of the profession, and the tolerance of his patrons. But "the crampy shackles" will "tie" him still, and mark the type of his whole professional life.

But what of the stripling? Happily, his chin was yet innocent of down, and consequently there were no incompatibilities between himself and the birchings which appertain to the school-room, the

seminary, or the college. Birch is fragrant ; and where it enforces diligence, it sheds a grateful and refreshing odor. The stripling took his discipline kindly, and with such singleness of heart, that he came to be unconscious, even, of the obelisk and its blazon. I am in no mood to follow him, in his progress onward, from the preparatory schools to the university ; and thence, through the halls of scientific medicines, to his profession. How should I ? My foot is unused to such acclivities. *Kith and kin* forbid, and prompt me to another path. "The soul of Jonathan was knit with the soul of David ; and Jonathan loved him as his own soul." To me, the stripling is an alien, and the history of his pupilage may be written, and his professional characteristics portrayed, by some kindred Bigelow, or Holmes, if they choose, but not by me. I merely chronicle the fact, that Jonathan was no churl in his welcome of the younger brother to a common field of labor. He was patronizing and protective in his bearing toward him, as became an elder brother, though it often occurred that the touch of the stripling's finger achieved the purpose for Jonathan's patient, that had long resisted the sturdy "yeo heave."

The effective study of medicine involving the exercise of the mental powers, some just conceptions of the constitution, or economy of these powers, must be necessary to their right use. I may be wasting words upon others, but I am conscious that what I now conceive to have been erroneous opinions on this subject, were serious obstacles to my own progress in professional attainment. Many distinctions have been attempted to designate the difference between genius and talent, which I conceive are too vague to be of much practical value. My own perceptions are too gross to appreciate the transcendental chemistry by which the schoolmen have analyzed the human intellect, till each ultimate iota of its faculties is set apart ; till the last barley-corn which found itself balancing doubtfully on *ultima thule* is subjugated, and falls discreetly into its place, with the prim precision of a nosological arrangement. With all deference to the Psychologists, in their attempts to anatomize the intellect ; to dissect its several systems ; to demonstrate each specific organ, they seem to have acted on the unwarranted assumption that the faculties of the mind, like the functions of the body, are each dependent on the agency of a specific intellectual organ ; as the function of sight is dependent on the physical organization of the eye, or hearing on that of the ear. Physiologists have succeeded, in the main, in demonstrating the dependence of each particular function on its appropriate

organ ; and have been so distinctive in their definitions, that little danger remains of our mistaking the manifestations of one, for those of another. But it is noticeable that one faculty, or manifestation of mind is often defined by terms, or phrases, which are as often used, and with equal appropriateness, to designate another. I know not that the masters in psychology advocate such analogy between mental and physical organization, for I never read them. I simply know that the second-rate literature of the day, with which, I am sorry to say, I have been most conversant, and to which I fear young men are generally most addicted, abounds with loose phraseology, and crude opinions, leading to the conclusion that each separate act, or process of the intellect, is effected exclusively by some isolated or specific faculty of the mind, and not resulting from the action of the mental powers, *as a whole*. Analogies no doubt may be found, or fancied, between the most dissimilar things ; but on the plea of analogy, we might as well ascribe the phenomena of vital action to the power of gravitation, it being the law which regulates the motions of the visible universe, as to claim the dependence of each intellectual faculty on a special mental organ, the several functions of the living body being dependent, each on its special organ. A better illustration would be, to liken the intellect to the *single string*, which the finger of Ole Bull has demonstrated to be adequate for unlimited variety and power of intonation.

The power of invention, which seems to have been claimed exclusively, as the definition of genius, from its very nature must include, and be identical with, the elements which constitute the power to improve, to adapt, to execute, being the definition claimed for talent, would therefore seem to favor the conclusion that genius and talent are mere properties, moods, or manifestations of one intellectual principle. Cultivation of the mind, no doubt, is more effectual in the development of what is called talent, than of genius, though manifestly not inoperative on the latter. Indeed, I see not how it is possible to *cultivate* genius, except by the methods which all admit are indispensable to the development of talent ; and while we are idly admiring and coveting the power of the former, we are wasting our resources, and insuring our own defeat, by spurning the humble achievements, which constitute the step-stone to the higher glory. The strength of talent is of more intrinsic worth than the brilliancy of genius.

I do not propose to offer a programme of subjects, nor of medical books, for the guidance of medical students, or the younger members

of the profession. It is the province of educated men. My purpose is simply to suggest those aids and expedients, which separately may seem trifles, but in the aggregate prove invaluable, and perhaps, indispensable, to the full appreciation of the books and medicine. *Language* is the vehicle, and to some extent even, an instrument of thought. It might be too much to claim that a good thinker, of necessity presupposes an adept in language ; but we may safely assume that, *other things being equal*, the accuracy and force of our thought will be in proportion to our knowledge and skill in language. Single words have frequently such diversity of meaning, and phrases such variety of import, depending on their relations with other words and phrases ; and often, indeed, varied by the subject on which they are employed, that two minds, of equal capacity, and giving equal heed, may draw very different conclusions from the same lecture, or the same chapter, and yet both be wrong. A very little knowledge of Latin, my own experience has proved, greatly facilitates our apprehension of the force and import of English words. If *so much* is not already attained, it should be attempted. A little success will amply repay all the sacrifice it might require. A large amount of professional terms in medicine are derived from the Greek ; and these often compounded from several roots, of diverse import. Being wholly ignorant of Greek, myself, as a consequence, I have probably expended more extra time, during my life, in turning the leaves of all sorts of Lexicons, to attain the required elucidation, than goes to the *legal* term of medical pupillage ; and what was still more disheartening, often unsuccessfully. Though I am far from regarding our ignorance of Greek and Latin, as an insurmountable bar to fair attainments in our profession, I have little doubt that six months, devoted to the study of these languages, under a competent teacher, during pupillage, or even in the early years of practice, would be repaid by four-fold facilities in learning aright the principles of medicine. The benefit is not all comprised in the disclosure of the literal import of terms, compounded from Greek and Latin roots ; but in the subjugation of the mind to the power and significance of cultivated language, thus pervading and irradiating the whole range of study. Indeed, if there be one indispensable prerequisite for the successful study of medicine, it is knowledge and skill in the *language* in which it is presented to the mind of the student ; the master-key to all the learning which the same language furnishes for its elucidation.

If the young practitioner, whose early training has been stinted,

expects to repair the evil, he must secure facilities, both in regard to time and place for study. He must also enforce upon himself a *habit* of study, which, unfortunately, his training never can have fully formed. A habit of study in its appropriate time and place, will beget a habit of observation and reflection, without which, progress in professional knowledge and skill is impossible. When the appropriated hour arrives, professional engagements permitting, he should be found in his place, and at his table ; which should be furnished, as its permanent and indispensable appendages, with the best dictionaries, "unabridged," and without stint ; English, classical, medical, surgical ; and the more the better, in each department. Compendes in medicine are dangerous toys, but compendes in other departments of science, needed for reference, and often indispensable for elucidating passages in medical books, are, perhaps, admissible. The medical periodicals should never be overlooked ; indeed cannot be wholly disregarded by the medical practitioner, young or old, without loss, and even retrogradation, in his professional position. It might even be a judicious improvement in medical education, to add the exaction of some familiarity with these, to the pupil's programme.

It should be borne in mind, however, that the intellect can never be disciplined to practical efficiency in medicine, by exclusive professional habitude. The mental powers, wearied with protracted effort in one direction, are not merely rested, but refreshed with new accessions of vigor, by occasional employment in some other direction. The hyper-fecundity of the age in works of fiction, farce, and foolery, makes the proper selection of books a most difficult achievement. Nineteen-twentieths of the current literature of the day would be more fitly appropriated as fuel for the fire, than as food for the mind. Fortunately for us, right-minded and intelligent benevolence, co-operating with enterprise in trade, has provided the means of furnishing our table without danger of loading it with obtrusive frippery, mawkish sentiment, or moral pollution. The "Living Age," offers an example of sound eclecticism in literature, judiciously conservative, and worthy of all imitation. The young physician will soon have attained no small amount of the general knowledge, and have done something in the effective mental culture, which his professional necessities require, by the careful perusal of its weekly numbers.

The exercise of reducing our own thoughts to *written* language, will be found a useful method of cultivation. But it should be borne in mind that thoughts, to be written, must preëxist in the mind. It does not follow, however, that an attempt to write should always be

deferred till we are conscious of the thought ; for the effort itself may be the very stimulus required, to rouse the torpid intellect to activity. It may be well to consider the question, meanwhile, somewhat deliberately, whether our manuscript shall be dispatched at once to a Medical Journal ! Dr. J. Bigelow's just rebuke should first be pondered : " Medical journals are filled with the crude productions of aspirants to the cure of disease." The pen should be used to minister to our own cultivation ; not to our self-conceit. The same writer has condensed a volume into a sentence, on the subject of medical education, before which my own pretension should be dumb. " The usefulness of a medical school depends not so much on the length of its session, as upon the amount of education, primary and ultimate, which it requires, the fidelity with which it exacts its own professed requisitions, and the train of healthy exertion, active inquiry, and rigid, methodical study, to which it introduces its pupils."—*Buffalo Medical Journal*.

PART VI.—EDITORIAL AND MISCELLANEOUS.

THE DANGERS OF IGNORANCE.—The best writers in all departments of literature, except professed fiction, are accustomed to regard it as a rule that before they write upon any subject they should gain as accurate information as possible concerning it. Especially is this the case in the various departments of science. The departures from the rule produce results sometimes sad, sometimes comic; though the latter class, while they make one smile, excite also the feeling of pity for the writer.

Even in matter of fact medical literature, we have seen several instances of the latter class, though we must confess that in a somewhat protracted editorial experience we have found them rather rare. Nothing however has met our eye which excites so constantly and so equally throughout the whole our laughter and our pity for the writer as the following, which we extract from the " New Orleans Medical News and Hospital Gazette" for September. That our readers may fully appreciate it, we ought to say that there has been somewhat lately a new infusion of editorial strength into this journal which has chiefly developed itself in quotations, rhymes, and a free use of interrogation and exclamation points.

But we give the article with all its original adornments ; changing nothing and italicizing nothing :

Catheterization of the Trachea, etc.

Turpe est viro, id, in quo quotidie versatur ignorare.

Although long convinced of the utter futility of the much vaunted operations of Dr. Horace Green, of New York city, we have hitherto remained silent on the subject, looking with unwavering confidence to the speedy advent of such an unequivocal and impartial expose of the of the whole matter by his own New York brethren as would be most satisfactory to the whole profession. Notwithstanding a greater delay than we had anticipated, the time has arrived ; the enlightened medical men of New York began to feel the importance of settling definitely this widely vexed question, and in December last the "New York Academy of Medicine" appointed a committee of seven of its members to investigate the matter. The report of this committee has at length been presented to the Academy. The gentlemen composing the committee are said by the *New York Medical Times* to have been chosen by Dr. Green himself, consequently we have no reason to expect objections on his part, either on account of ignorance or personal animosity. Six of the committee (Drs. Parker, Wood, Stevens, Anderson, Metcalf and Stone,) make a "majority report," which is, as we conceive, totally adverse to all Dr. Green's pretensions, and Dr. Barker, of whom the *New York Medical Times* says—"Dr. Barker's interests are identified with those of Dr. Green in this matter, and, therefore, due allowance must be made for his minority report"—made a minority report in support of Dr. Green. In reading the account of this latter report, we are forcibly reminded of the drowning man catching at a straw ; strange as it may seem, Dr. Barker at one time so far forgot himself as absolutely to offer to a body of scientific gentlemen, as evidence for the support of his friend, Dr. Green, the certificate of a parcel of *women*, whom Dr. Green had not cured, but had under treatment ! 'Tis said that straws show which way the wind blows. We fear this is a "puff" of unwholesome quality.

For some years past Dr. Green has been burning out the trachea (?) of his patients to an extent peculiar to himself ; as is always the case, he has had some proselytes who have ever been ready to echo his declarations, for

"'Tis thus the spirit of a single mind
Makes that of multitudes take one direction,
As roll the waters to the breathing wind,
Or roams the herd beneath the bull's protection."

The mass of the profession, however, have rejected both his theories and his practice ; some not believing in the practicability of the operations, others denying the utility of the same, even if practicable. Although Dr. Green has been pretty freely assailed in various quarters, still many of his brethren have kept hands off ; but there is a time when forbearance ceases to be a virtue. We listened in silence to tales of burnt-out trachea, and even to right and left bronchi cath-

eterized at will ; but when Dr. G. proclaimed that he had, in direct opposition to the simple but unerring laws of hydrostatics, injected a dram of a solution of nitrate of silver into a cavity in the lung, he not only took the fatal leap which is ever, sooner or later, the lot of the wild enthusiast, but he offered one of those naked insults to the common sense of his brethren which could not be too promptly repelled.

For two years past Dr. Green has been in the daily habit of introducing instruments (?) into the trachea; he would have us believe that he is the expert, the Magnus Apollo in this *novel* (?) art ; yet Mary Norton, in presence of the committee, vomited a portion of the contents of her stomach through the tube which Dr. Green himself has introduced, and which he has assured the committee was then in the trachea—the avowal of Mary Norton to the contrary notwithstanding. If this is the degree of certainty arrived at by Dr. Green, save us from his operations ! What would be said of the medical man who, if called on to cleanse the stomach of poison, should pump water into the *lungs* of the patient and *drown* him ? And yet, with all due deference for Dr. Green's skill, we think he is the very man to commit the blunder. If he could not be certain of the whereabouts of his instrument in the case of an individual on whose trachea he had been accustomed to operate, and who insisted that the instrument was in the œsophagus, we maintain that he would be as apt to drown a man with a stomach pump as to wash out his stomach. This is not exaggeration ; it is one of those plain, homespun inferences which arises in the mind of any honest searcher after truth. But we pass on to another point of evidence.

In eighteen cases where the committee endeavored to introduce the sponge probang into the trachea, they *failed eighteen times*—or one hundred per cent. The N. Y. *Medical Times* says these failures were at the hands of Dr. G. himself. With a small curved tube, such as used by Dr. Green himself, there was *ninety-two per cent. of failures* ; and with a tube curved “to a form corresponding to a circle six inches in diameter,” there was thirty-eight per cent. of failures. So that it is entirely a matter of *accident* when the sponge probang enters the larynx; it is next thing to accident when Dr. Green's own tube enters; and in thirty-eight cases out of every hundred the subjects of the injection through the largely curved tube must be content to take the solution into their *stomachs*. Yet, most lucky dogs are these thirty-eight; for the committee report the speedy death of the only subject into whose *lungs* they introduced the solution.

We have not room in our journal for as extended remarks on this important subject as we deem necessary ; we should have been pleased to call the attention of our young practitioners more closely to all the points; it is this portion of the profession who are more apt to be caught by hooks baited with highly flavored novelties. This is a progressive age, but it is also the age of humbug. All is not gold that glitters, nor is the dictum which emanates from a medical school any more truth for its origin, than Worcestershire sauce the genuine article for having the label on the bottle.

We have always been, and always expect to be, the advocate of specialities in medicine; we maintain the ground that any mind of medium capacity, can master one subject, while few can master all; and consequently, both the profession and their patrons would be benefitted by the system. Moreover, a devotion to specialities would better enable us to contend against the hoards of quacks who surround us. However, we will always be amongst the first to proclaim against the *prostitution* of specialism. If a member of the profession be a good oculist, aurist, surgeon or obstetrician, we will most cheerfully acknowledge the same; but we will ever discard all pretensions not based on reason and sound philosophy. The moment a man aspires to a reputation for impossibilities, then is our pen against him—not as a man, for as such we know him not, but as a rebel to science.

This report of the New York Academy of Medicine is one of the severest rebukes ever inflicted on so prominent a member of our profession, though the known character of the six gentlemen who presented the same is sufficient earnest of its justice. While we criticise we indulge no feeling of exultation, for

“The truly brave are soft of heart and eyes,
And feel for what their duty bids them do.”

Being always proud to acknowledge amongst our ranks intellects such as all most truly accord Dr. Green, we feel but too sorry that he should have thus cruelly ridden a hobby so little able to carry him.

To the readers of the Monthly we do not need to point out the lamentable errors into which the writer of the above has fallen. We say lamentable, because it is a thing to be lamented, that a gentleman, (for such we shall assume that the writer is, though his article does not bear any particular marks of his being such,) should rush into print, apparently to make permanent the evidence of his ignorance.

For his information we shall say a little, though our purpose was not to speak of this matter again for the present. We indulge the hope that the writer may be benefitted by it, but his case looks like one of chronic ignorance, accompanied with an unwillingness on the part of the patient to be cured of it.

The writer must have been pretty well inflated with something to make such a beginning as the first paragraph. In this part of the country it is usually called “gas,” and produces no effect except to make readers laugh at authors. We presume it is the result of his protracted silence, which seems to have continued till this *quasi* pregnancy came to a sudden termination. It must be a great relief to the author to be rid of it. Letting the gas blow by, however, we must *first* notice the fact that the mode of appointing the committee is erroneously stated, or at any rate so as to produce an erroneous impression. *Secondly*, the writer endorses a false assertion of the now sole editor of the *Medical Times* of this city, that the committee was

selected by Dr. Green himself. The facts we have stated in another page of this number of the MONTHLY. *Thirdly*—It is not true that six of the committee made a majority report, as we showed in our September issue. *Fourthly*—Dr. Barker did not read “the certificate of a parcel of women whom Dr. Green had not cured but had under treatment.” But supposing he had done so, it would have been of more weight with honest enquirers than all the mendacious assertions of the *Times* editor.

In the second paragraph we have more “gas,” more ignorance, an interrogation point, some rhymes, and some misrepresentation. We permit the “gas” and its accompaniments again to pass by, and simply suggest to the writer, to study the effect of crystallized nitrate of silver upon mucous membranes before he again twattles about its “burning out.” His assertion that “Dr. Green proclaimed that he had injected a dram (*sic*) of a solution of nitrate of silver into a cavity in the lung” is false, and we challenge the writer to produce his proof. Of course, all the bombastic language about “leap,” “enthusiast,” “insult,” etc., is wasted.

In the third paragraph we have not so much gas, but more interrogations, more ignorance, more false assertions. If the writer means to say, that Dr. Green has daily introduced catheters into the trachea for the last two years, he is in error, for the practice was commenced only one year ago. If he means to allude to the sponge probang, he is equally in error, for Dr. Green has daily practiced it for more than ten years.

It is untrue that Dr. Green was accustomed to operate on Mary Norton’s throat, and so the writer will see if he will take so much trouble as to read the majority’s report. For the error of the remainder of his statement concerning this woman, he is not responsible. What is said about drowning, sounds very pretty.

The fourth paragraph shows a sweet simplicity as well as marked credulity in believing the assertions of our mendacious neighbor. As we have not now to do with him, we do not dwell upon it. The last sentence contains a truth, (we are glad to see one) which must sting the majority, while it at the same time seems to be intended to give a false impression. It is true that “the committee report the speedy death of the only subject into whose lungs *they* introduced the solution,” an offence for which it has been suggested that they are indictable by the Grand Jury. It is not true that it was not introduced into the trachea of others before the committee by Dr. Green, and if the writer has read the report of the majority, which

we doubt, he must have known that it was twice done by Dr. Green, even to their satisfaction. We have elsewhere stated that the result has been beneficial. Such a falsification or suppression of the truth does not become a gentleman.

The next paragraph, about Worcestershire sauce, dictums, &c., also sounds very pretty. It contains two or three stale truths expressed in a stale way. We presume the figure of the sauce is a good one, for it looks a little as if the writer had formerly traded in it.

The last paragraph but one is a gassy blast on the writer's tin trumpet, in which he brags a little, but which is of no sort of importance to any body else. While the final one is so decidedly in Jack Falstaff's vein as to recall his valor to us. If Dr. Green had been overthrown—which does not happen to be the case—the comparison would have been almost exact between this valiant, heroic, poetical and lachrymose editor, and Jack standing by the side of Hotspur's body.

In conclusion, is it too much to ask the gentleman who wrote this article on which we have commented, to take the precaution before he again writes on a scientific subject, and this one especially, to obtain some little information concerning it, and to go some where near the truth. It is on his account, not our own, that we make the request.

THE EPIDEMIC AT NORFOLK.—We have had the pleasure of a conversation with Dr. Warren Stone, of New Orleans, who, on his way north, visited Norfolk. His opportunities for studying yellow fever have been abundant for more than twenty years, and he has used them diligently. He believes, if we did not misunderstand, that yellow fever is a specific disease, occurring but once ordinarily in the same person, and with none of the characteristics of contagious diseases. At Norfolk he investigated the statement that it was imported by the steamer Ben Franklin, and found that there were cases of the disease in the city before the Franklin broke bulk or even arrived. Contrary to the popular belief, he maintains, and the results of his enquiries seem to prove, that the terrible epidemic in Virginia is the result of some influence unknown to us, but which has extended itself gradually from Rio Janeiro, northward. The characteristics of the disease at Norfolk are the same as at New Orleans in 1853, and Dr. Stone finds no evidence that it is a new disease or African fever, as it has been termed, but a severe epidemic of ordinary yellow fever.

CORRECTION.—Several journals have fallen into an error concerning a fact of some importance. The cause of it is apparent, but we shall not now dwell upon it. The error is in believing that the committee on cauterization, etc., was selected by Dr. Green. This is not true in any sense. The fact is that the President of the Academy, Dr. Smith, after the adjournment, asked Dr. Green of whom the committee should consist. Dr. Green at once declined to name them, but remarked that as Dr. W. Parker had moved the resolution, it was proper that he should be chairman. After the number was almost filled, Dr. Smith asking constantly "who next," Dr. Green named Dr. Sayre, but somebody, (there were several bystanders), objected to him, because there were surgeons enough already appointed. It is a little doubtful whether Dr. Green or Dr. Smith first named Dr. Barker, though it is certain that he was objected to, "because he is a friend of Dr. Green." On the other hand, no one was opposed by Dr. Green.

It is not our purpose to say more at present on this subject, and we should not have occupied so much space as we have in this volume of the MONTHLY, had it not been for the hostility and misrepresentations of the *Times*, and the silence of the *New York Journal of Medicine*. Our readers are probably aware of the reasons which provoke the assaults of the former. If report be true, the latter is tongue-tied by the obligations of the editors to the chairman, by whose assistance they became proprietors of their journal.

CHANGE.—Prof. Torrey has resigned the chair of Chemistry in the College of Physicians and Surgeons of this city, and Dr. Le Conte, of Georgia, has been appointed in his place. We have not learned whether or not he accepts the appointments. Other changes are reported by rumor, but we have no authority to repeat them.

OPHTHALMIC SCHOOL.—Our readers will observe Dr. Stephenson's advertisement of his winter lectures in his specialty. It will be seen that his last class were highly gratified by his course.

AMERICAN PHARMACEUTICAL ASSOCIATION.—This body held their annual session last month in this city, in one of the lecture rooms of the New York Medical College. The attendance was we judged good, and the discussions were animated. We shall, no doubt, have a full report of the proceedings in the pharmaceutical journal.

THE AMERICAN MEDICAL MONTHLY.

NOVEMBER, 1855.

PART I.—ESSAYS, MONOGRAPHS, AND CASES.

A Lecture, Introductory to the Winter Course at the New York Medical College, for the Session of 1855-6. By HORACE GREEN, M.D., LL.D., &c., Professor Emeritus of the Theory and Practice of Medicine. (Published by request of the Class.)

MR. PRESIDENT: Since the inauguration of this Institution, I have had several opportunities, at the different gatherings of our classes, to appear before you as the orator of the occasion. What I have already done in this way should have sufficed for the present. But a few weeks ago, at a meeting of my obliging colleagues, this honor of giving the opening address of the present Session was again conferred upon me. Remembering, however, that those subjects which ordinarily go to compose *Introductory Lectures*, like the raw material out of which "Fourth of July Orations" are manufactured, had long since been exhausted, I most respectfully, and, as I thought, positively, declined the honor. But neither declinature nor demurrer, on my part, availed me anything; for, although duty unfulfilled had strong claims for this labor upon each of these delinquents, yet having determined individually to reject her

claims, they resolved collectively to impose the task upon another. Outnumbered after this manner, I thought to appeal to our Trustees, or to bring my case before the Censors of our College, but reflection often evinces wisdom, and it brought me to the conclusion, that the gathering together of our worthy Trustees, enough to form a *quorum*, would give me more labor than it would to write an introductory lecture; and, inasmuch as our excellent Censors had never hitherto reversed a single decision of the Faculty, I had no confidence they would do it in my own case; at least, I did not desire, on account of our graduating classes, to have a precedent of this kind established. I therefore assumed the task, with as good a grace as I was able; and, should I fail, in its performance, to meet your expectations, let your displeasure fall on those who "knew their duty and yet did it not."

After all, gentlemen of the class, one part of the duty which has been assigned me is certainly most agreeable—that of welcoming you to this Institution consecrated to Medical Science. Those of you who, as former members of our class, return to us again, we welcome as tried friends, even as members of our own family; and we pledge our continued and undiminished interest in whatever concerns the prospects and happiness of each and all of you. To those who come as strangers, and for the first time, to join our class, who, it may be, have left home, and friends, and familiar scenes, to find yourselves amid the solitudes of a great city, surrounded by strange sights and scenes, and yet stranger faces—to you we tender a cordial salutation. For you, we confess to a more than ordinary feeling of kindness and interest; for we remember—after more than a quarter of a century—the day, though it were but yesterday, when, after journeying many hundred miles from our father's house—not with locomotive speed, but with the stage-coach diligence of those days—we entered a distant town, and enrolled our name among the matriculants for a first course, in the old University of the city of Penn; and well do we remember the feelings of sadness, and of home-longings, which for a time oppressed us, and how gratefully we received the first manifestations of interest in our welfare that came from our kind preceptors.

To all of you, then, gentlemen, whether you come as old friends or new, from whatever portion of our wide and happy country, you come to us,—to all I am authorized to proffer a sincere and heartfelt welcome, and to pledge the exercise of our watchful regard over whatever concerns your present and future welfare. “*Accipe daque fidem !*”

It may possibly be recollected by some now present, that, in an address which I had the honor to deliver, a few years ago, on one of these public occasions, it was maintained that the “future progress of medicine in America” is certain and inevitable. That because of our peculiar national characteristics ; because of our “commercial and eclectic character ;” and particularly because of the freedom of our profession from “governmental restrictions,” the medical art is destined to make unequalled advances in this country ; and that the day is yet coming when we shall not only have returned an equivalent for all we have received from the professional savans of Europe, but shall, moreover, in our turn, take the lead in the progressive march of the Science of Medicine.

Brief as the period has been since the above prediction was uttered, yet, were it necessary, it could be shown by a reference to our progress in Operative Surgery, in Therapeutics, and in Practical Medicine, that the day of its fulfilment had already dawned. It is to prepare you, gentlemen, to act well your part in this great, this glorious work of benevolence—it is to enable you yet to contribute your share in the advancement of our noble profession, that you are gathered in this Institution ; and whilst we urge you all “to give yourselves wholly to this work,” we place at your disposal, not only the entire advantages connected with our school, but we proffer for your assistance all the aid we have in our power to bestow.

It is at the commencement of our intercourse, as pupils and instructors, that we desire to impress upon each and every one of you the paramount importance of obtaining a thorough medical education ; for, in whatever estimation we may be held by the superficial and unreflecting portion of the world, still it remains true that with the members of the medical profession rest obligations, in connection with the causes of disease, with epidemic influences, and with sanitary regulations, of the

utmost weight and importance—obligations which you will be called upon to meet, and in the intelligent and faithful discharge of which are involved, not only the lives of individuals, but often immunity from wide-spread and wasting disease, and the consequent prosperity and happiness of entire communities and nations !

I have alluded to a dearth of topics—such, I mean, as we might infer would be sure to interest the individuals who ordinarily compose a mixed assembly. And yet there are many subjects which have an intimate relation with Medical Science, in the discussion of which the entire lay community have, or ought to have, an absorbing interest. You, gentlemen, have congregated in these Halls for an important, a noble purpose ; but whilst it is for a specific object, it is also one with which is intimately connected the best interests of suffering humanity !

Who then in this assembly, whatever their age or condition, whatever their profession or their occupation, can be indifferent to those subjects which belong especially to the domain of Medicine—subjects “ which not only concern personal feelings and social happiness, but which involve the well-being of society at large, and the intellectual as well as the physical character of individuals and nations.”

I shall be pardoned, then, by this intelligent audience, I am sure, if I occupy the remainder of the time allotted to me this evening in noticing a few of the important topics which are to engage our attention in the course of medical instruction on which we are about to enter.

In Grecian Mythology, from the same source came light and health. Phæbus Apollo, the same Olympian divinity who diffused the one, dispensed the other. At the present day, wherever Medicine has made its greatest attainments, there its beams of truth have been the most universally diffused. Seeking in its glorious aim, not only to relieve the pains of suffering humanity, and ultimately to eradicate disease, it has also offered to every one a participation in the highest good, and has sought to shed its light, and to bestow its truths as the common patrimony of all mankind. And hence we claim this for our art, that in whatever country Medicine has made the

greatest progress, whether it has been in Egypt, in Ancient Greece, or amid more modern nations, there science and civilization have also reached their highest culmination.

But here I may be met by the pretentious assertion, one which is frequently made by the arrogant and unreflecting, that we cannot claim for Medicine the attributes of a true science. It is not my intention to occupy your time in establishing the claims of Medicine to be regarded as a science, by arraying the mass of evidence which may be gathered from our minute, thorough, and comprehensive knowledge of *Anatomy*, *Physiology*, and *Pathology*, although by reason of these our attainments, we may always demand for Legitimate Medicine a place among the inductive sciences, because Medicine is a science founded on certain well-established and immutable truths, which elementary branches are of themselves distinct sciences. Not by an exhibition of these truths, I repeat, shall I seek to sustain our claims, but rather by pointing out a few of the discoveries which Medicine has made, with regard to the *causes of disease*; *the mode in which these causes act in producing disease*; and *the methods of their removal or prevention*. In this way shall I be able, I trust, not only to communicate information that may be valuable to all, but to prove, inferentially at least, that to Medicine belong not only the characteristics of an exact science, but also the attributes and dignity of a divine art.

By a reference to the great mass of medical facts already collected, which relate to the origin, cause, and modes of propagation of disease, it will be found that among these causes are some which are especially efficient and wide-spread in their influence. Among them are the *specific poisons*, which engender those maladies ordinarily denominated *contagious diseases*, and *epidemic influences*, or what Sydenham designated the general epidemic constitution of the air. There exist various local causes, some constantly present, others occurring from time to time, which unite in producing and diffusing disease; but a review of the whole of this subject would far exceed the limits of a brief address, and is therefore inadmissible under the present circumstances. In considering, however, these two important agents of disease to which I have

just alluded, facts with regard to some of the laws of contagion, and of sanitary reform or measures, will be noticed, a knowledge of which is of vast importance to both professional and lay communities.

In pursuing this investigation, I shall aim to establish the following propositions :

1st. That all contagious diseases have their origin in a specific poison, which poison is formed in the living fluids of the body.

2d. That endemic diseases arise principally from local causes—causes over which man ordinarily has control ; that they are not necessarily contagious, but, under certain circumstances, are capable of becoming intensely contagious.

3d. That epidemics arise from some general atmospheric or telluric cause, or from causes emanating from both these sources ; that they are governed by some unknown laws, and are never contagious ; and, finally, by establishing these propositions, I shall seek to prove that the employment and maintenance of all sanitary cordons and quarantine regulations (except so far as regards the isolation of the sick affected by known contagious diseases) are utterly absurd, injurious, and oppressive, and are wholly inoperative to prevent the introduction and diffusion of disease.

Few questions connected with Medicine have been more widely discussed than the subject of contagion, and it is not to be denied that a “very great, and apparently irreconcilable, difference has long existed among medical men regarding the exact amount of influence exerted by contagion in the propagation of disease.”

The important discoveries which have been made recently in Organic Chemistry, the amount of positive knowledge which has been acquired in relation to the chemical compounds of the living organism, and the nature of those morbid chemical actions which influence the decomposition of organic bodies—all these, by putting us in possession of a large mass of scientific facts, have served to unite opinions, and to enable us to reason more correctly on this subject than at any former period.

That we may the more perfectly understand this subject, to

which for a brief period I ask your attention, let us for a moment consider, that every human body consists of a mass of organic elements, or chemical compounds, produced and controlled by certain vital affinities. These various organs and tissues of the body constitute the most beautiful specimen of mechanism, the most perfect combination of power, and the finest development of action, presented by the physical world. All the functions and chemical affinities of these organs are carried on, modified, and entirely sustained by that mysterious agent termed *life*. So long as this vital force is in operation, its action is not only constantly opposed to decomposition and organic change in the living body, but whenever any virus, or cause of disease of any kind, is by any way introduced into the system, a vital action, which we term fever, is set up to oppose and prevent the effects of the morbid agent, and to expel it from the system. Let, however, this influence of life which so preserves and controls the vital elements and organic compounds of our frames, be withdrawn, and decomposition and structural change commence at once, in all the organs and tissues of the body, and our vital organisms are resolved back into their primary elements. Recollecting these facts, then—first, that every living body is a perfect chemical laboratory, in which vital actions, affinities, and combinations are being constantly performed; and, secondly, that any variation from the perfect performance of these vital actions, or functions, constitutes disease, and is an interference, more or less, with the chemistry of life,—bearing in mind, I say, these facts, we shall be able better to understand what contagion is, and to comprehend how the introduction of any contagious matter into the system, may prove a decomposing agent, which shall become active on the organism and give rise to the actual formation of compounds in the blood that are incompatible with life, and which must either be removed, and their action arrested, or must go on increasing till life is overcome.

The principle to be apprehended with regard to contagion, then, is this:—The blood is a compound fluid, containing special materials, on which alone the several specific poisons have power to act. Most of the contagious diseases, therefore, are produced, and are perpetuated, by a specific virus which is

formed originally in the living blood. This virus, thus formed, on being introduced into the blood of a healthy individual, will meet with the same material as that of which it is composed, and will therefore be there reproduced, and in this manner contagious diseases may be infinitely propagated.*

This morbid poison or cause of disease may be communicated to others by direct contact, or the effluvia arising from the bodies of the sick may be inhaled through the medium of the atmosphere, and thus find its way, through the lungs, into the circulation. In whichever of these ways the poison is introduced into the blood, it there finds in this fluid a special material on which the virus is capable of inducing its own peculiar action and of producing in the system the same form of disease as its own. A person thus subjected to this morbid action, and having once undergone the disease, is, as a general rule, secured against a second attack. Among the diseases which are indisputably contagious are the *exanthemata*, or eruptive diseases, such as small-pox, scarlatina, measles, and typhoid fever, together with hooping-cough, hydrophobia, and a few others. "Experience has proved," says Charles Wm. Bell, "that the special materials on which alone the several specific poisons have the power to act, though unknown as to their exact nature, are various, and frequently finite in the system; that the portion of the system capable of being so acted upon is generally of limited quantity, and not essential to existence, and that when once converted to a new and different condition and expelled, it is not, for the most part, again reproduced."†

Leibig, in his "Organic Chemistry," has partially defined the action of specific poisons in producing disease, in these words. He says: "If the exciter" (to chemical action) "be able to impart its own state of transformation to *only one* of the component parts of a mixed liquid, its own reproduction may be the consequence of the decomposition of that body."

* The term *Contagion* was formerly restricted to the communication of disease by direct contact; and *Infection*, to that by effluvia arising from the bodies of the sick, and communicated through the medium of the atmosphere. As the same result occurs in both cases, the introduction of the specific poison into the system, the terms are now considered synonymous.

† Trans. of the Provincial Med. and Surg. Asso., Vol. xvii., p. 8.

By a more familiar illustration (one which Mr. Bell and others have employed*) the action of specific poisons in the system may be understood if we recall the effect which is produced in a saccharine solution, containing a small proportion of mucilage, by adding to it an active ferment. Fermentation being induced, the gluten is acted upon, atom by atom, till the whole has been converted into new ferment. This accomplished, further fermentation ceases for want of material to act upon. The parallel of this with eruptive contagious diseases, as small-pox, scarlatina, &c., is exact. When an atom of the virus of any of these diseases is introduced into the blood of a healthy system, all the morbid material it contains is converted into its own condition, and the production of fresh virus only ceases after all that this exciter has power to act upon has been consumed. But, further, if a small portion of the gluten that is undergoing transformation be transferred from the first solution to another similar one, it will propagate the same action to all the gluten it contains; and so will a small portion of the virus thrown off from the blood of one person, and absorbed into that of another, propagate its action to all the *materies morbi* that is present in that body.

With regard to the primary origin of contagious disease, for all specific diseases must have arisen from some cause, at some period of time, however remote, Sir Gilbert Blane says: "There is not a secretion or exhalation of the human body which may not be so vitiated as to produce diseases communicable to others by contact or respiration, under fortuitous circumstances of combination, &c. So that there may be more maladies awaiting our species, which are still to develop themselves, under the endless combinations of the incidents of human life, through endless ages to come." In the history of Medicine, no fact is better understood than this, that some diseases of ancient times have become extinct, whilst others, whose existence was before unknown, have made their appearance since the dawn of Medical Science.

Until the middle of the sixth century small-pox was utterly unknown in the Western World, although it is well ascer-

* Ibid., p. 9.

tained that it existed in Asia, and especially in China, for an incalculable period before this scourge was known in Europe. Here, at length, it was introduced by the wild tribes, from the plains of Tartary, who added this evil to the devastation spread by their arms over the most civilized portion of the earth. "History," says Mr. Bell, "almost forces upon us the conclusion that, of all the myriads throughout the world who have suffered from this disease, not one has been so affected but by the propagation of new germs from the original virus, produced in the body of some ancient inhabitant of China, centuries before the disease was even heard of in Europe."

We can now understand, I think, the nature, the *modus operandi*, although we cannot comprehend the magnitude, of the blessing of the wonderful discovery of Jenner.

During a period of more than twelve centuries that loathsome and fatal disease, small-pox, had been committing its ravages throughout all Europe. About one-twelfth of the population of the globe had been, during these centuries, either destroyed, or deprived of their health, or disfigured, by this plague. In Great Britain alone, forty thousand persons died annually of this malady. But in 1796, a young physician of England, by adopting a course of careful, scientific inquiry, collected observations which led to a discovery that has already conferred untold good upon the human race, and has given immortality to the name of its author! This discovery of Jenner is a perfect illustration of the agency of a specific virus on its special material. Here a poison originating in the human system, but modified by passing through the constitution of the cow, is capable of exerting on that morbid material which exists universally in the blood of man, and upon which the small-pox virus, when communicated to the system, exerts its power, is capable, I say, of acting upon it in such a manner as to neutralize it, or expel it from the system, and thus, in a great measure, to render innocuous the contagion of small-pox. And this is only one of the glorious triumphs of our art. This discovery, like the Minerva from the head of Jove; sprung at once, perfect and efficient, from the studies and experiments of its great discoverer! The health and life of millions are preserved through its agency, without sacrifice of pain or privation.

And yet how was this discovery—than which, of all the blessings that have ever been bestowed by man on man, none has proved greater or more important—how was this discovery hailed by his professional confrères and the educated public? During all of Jenner's investigations, and these were continued for several years before his discovery was perfected and admitted, he received no aid whatever from his medical brethren. Indeed, in all his inquiries he was met only with opposition and ridicule, for, as his biographer has stated, having brought the subject frequently before the "Medico-Convivial Society," of London, to which Jenner belonged, it was at last *voted a bore* by the members of that society. And when at length he had succeeded, by introducing into the blood of an individual a small portion of the vaccine virus, in reproducing the disease in the human system, and was preparing to test its protective powers by inoculating his patient with small-pox matter, at this stage of his labors he was not only trembling for the result, but shrinking with nervous anxiety from the anticipated jeers of his professional brethren, should he fail in the trial, for at this period he thus communes with his friend Gardner: "Should anything untoward turn up in my experiments, I should be made, particularly by my medical brethren, the subject of ridicule, for I am the mark they all shoot at."

But the members of the medical profession were not the only opponents of Jenner, or of innovations in medical practice. Sir James Johnson, in his review of the life of Jenner, asserts that Ehrmann, a divine of Frankfort, attempted to prove from quotations of the prophetic parts of Scripture, and the writings of the Fathers of the Church, that vaccination was nothing less than Antichrist! Whilst another learned divine of the Church of England, in the eighteenth century, preached a sermon in London against inoculation, wherein he claimed priority for this discovery for one who has never been considered a regular member of the profession, for this learned divine publicly declared that inoculation was no new discovery, inasmuch as Job, he asserted, was first inoculated by the devil!

We have stated that all contagious diseases are produced by specific poisons, and that these poisons have their origin in the living blood. The number of diseases originating in this man-

ner are quite limited. Nearly all other affections, except those which have already been named as indisputably contagious, arise from deleterious or poisonous agents, which are found extraneous to the body, and from elements which do not exist in the blood, and are therefore necessarily *non-contagious*.

In my second proposition it is stated, that those diseases which are designated *Endemic*, or such as are confined to localities, and have their origin in local causes, which are more or less preventible, that these are not necessarily or ordinarily contagious, although from mismanagement and other causes they may become highly contagious. The most fruitful causes of endemic diseases are miasmatic exhalations, or exhalations arising from the decomposition of vegetable matters, or mixed masses of animal or vegetable substances, emanations from stagnant waters, from cess-pools, and from bad or imperfect drainage, the use of putrescent food, imperfect ventilation, etc. These causes may operate singly and separately, or may act in combination. By crowding together large masses of living beings in a confined atmosphere, with deficient food, such as our prisons of earlier times, and our emigrant ships of later periods, have enclosed, fevers of a malignant character are engendered, which are capable of becoming intensely contagious.

Epidemic diseases, on the other hand, differ from the specific and the endemic diseases, inasmuch as *they in themselves are never contagious*. Arising from causes which do not emanate from the bodies of the sick, but from external atmospheric influences, they are extended over the earth's surface, partially or generally, and are governed by unknown laws, over which man has no control. Not so, however, with the local or endemic causes of disease which we have just enumerated. These, such as malarious exhalations, putrescent food, foul water, offensive effluvia, and imperfect ventilation—all of which are more or less under man's control, are the poisons which engender in the system a special liability or "predisposition" to disease, and which impart to *all epidemics* their greatest potency. This relation which these two great causes of disease bear to each other is one of the highest importance. It is a subject which has recently received a large share of attention from scientific professional investigators, and which is one in which all should

be deeply interested, who regard the health and welfare of their own families, or of the communities in which they dwell.

That we may the better comprehend a subject of so much importance, we will now endeavor to explain—and will do it in as brief a manner as possible—the effect, or the *modus operandi*, of these predisposing causes upon the living body, and their connection with the great exciting cause of disease—epidemic influence.

The proposition already laid down must not be forgotten—namely, that the specific poison, from which contagious diseases arise, originates in the living blood, and that on being introduced into the circulation of a healthy individual, it there finds the same morbid material as that of which it is composed, by a fermentation of which, a reproduction ensues. Now, it is admitted by most pathologists, that the poison of epidemic diseases also acts on the blood in the manner of *ferments*. But this poison, instead of being engendered *within* the body, is always introduced *ab extra*; and, moreover, experience has established this important fact, that the presence of some special fermentable element in the blood is necessary to enable the poison of epidemics to be developed in the system. To this peculiar morbid substance, or ferment, the term *azotized matter* has been given, which is understood to be, says Dr. Carpenter, a material already in a state of putrefactive alteration, and, therefore, precisely in the condition in which it is most readily acted on by ferments.

Let it still be borne in mind that this material does not exist originally *in the blood*, like the *materies morbi* of contagious diseases, but like the poison of epidemics is always introduced from without, and as it arises from local causes which exist in our midst, may be made, if we will, subject to our control.

The presence of such a matter is absolutely requisite, in a great majority of cases, for the morbid action of epidemic poison, which poison has no direct action upon healthful blood, and the liability of each individual among a number who may be concurrently exposed to the same epidemic poison, will mainly depend upon the degree in which his blood may be charged with the matters in question.*

* Med. Chi. Review, vol. xi, p. 128.

Whenever the cholera atmosphere, for example, is conveyed to any place—and what is true of the cholera poison is true also of the poison of a large number of other epidemic diseases—its diffusion and severity among the inhabitants of that place will depend entirely upon the predisposition to the disease existing in their systems from the local causes to which I have referred. With the *origin* of these poisons, which give to epidemic atmospheres their peculiar morbid qualities, we are as yet unacquainted. We only know that “in the very same localities, and under identical circumstances, so far as can be traced, different forms of epidemic disease prevail at successive periods,” as typhoidal or typhus fever, dysentery, epidemic cholera, yellow fever, etc. But even were this knowledge attainable, could we discover the causes from which these epidemic poisons emanate, it is not probable that the extermination of the diseases which they produce could be accomplished by medicine. Like the other phenomena of nature, these are doubtless beyond our control. But although this knowledge is denied us, there has been revealed to us another truth of vast importance, one which has been established by such a mass of evidence, that we have no longer any excuse for disregarding it.

Experience and repeated observations, made in every part of the world, where epidemics have prevailed, have shown whenever, during their prevalence, any portion of the inhabitants are exposed to any one or more of the local causes, to which we have often referred—malaria, putrescent food, foul water, or atmospheric impurities of any kind, that upon those thus *predisposed* the epidemic poison, whether it be that of cholera, typhus, or yellow fever—first seize, and there manifests its highest degree of intensity.

On the other hand, all who have observed the progress of epidemic diseases are fully aware, that without any of these deleterious influences, the poison of epidemics is completely innocuous.

Viewing the matter, therefore, in this light, we have an explanation of the fact, that some localities will remain exempt from disease, frequently for years, when, without any appreciable cause, a severe epidemic will be developed. The existing local causes of disease in such places may, and often do, prevail for

several successive seasons, producing in the meantime only the endemic affections which are peculiar to the localities, or to the nature of the poison. No sooner, however, do we have the epidemic morbid influence added to the local poison, than we have developed some variety of zymotic disease, which form of disease will characterize the nature of the special agent with which that commissioned atmosphere is charged, whether it be the poison of influenza, of cholera, or of yellow fever.

The conclusions, therefore, to which we must necessarily come, from a consideration of these facts and observations, are :—

1st. That for the invasion and development of epidemic disease, the existence of two conditions is absolutely required—namely, the presence of the epidemic poison in the atmosphere—an agent not subject to man's power ; and the introduction into the system of a morbid decomposing matter, that has been generated in some external source, “and which consequently is preventable.”

And 2d. That the invasion of cholera, of yellow fever, and of other epidemics, is as effectually prevented by preventing the accumulation of azotized matter in the system, as by arresting the development of the epidemic poison itself.

If we refer to the history of cholera again, as an illustration, every medical man, who has had experience in this disease, is fully aware, that the inhalation of the foul air of our dirty lanes and cellars, the use of damaged food, or of water charged with decomposing matter, the presence of exhalations from marshy places, or from cess-pools, or imperfect sewerage, that these are among the most powerful, and certain of the predisposing causes which determine an attack of cholera. Abundant examples of this kind could be furnished, as having occurred during each visitation of the cholera in our own, and in other countries.

Another most remarkable fact that must not be forgotten in this connection, is the one admitted by Dr. Carpenter and other eminent physiologists, that “each of these causes, without a single exception, tends to induce *one and the same condition of the blood.*” The conclusion, then, seems irresistible, that this condition of the blood, in which it is charged with decomposing organic compounds, is that which is the immediate source of its

liability to be affected by the introduction of zymotic or epidemic poisons.

Now it is this last-named ally of disease, this morbid condition of the blood—a condition effected entirely by local causes, over which man, through known and appropriate sanitary measures, established by legislative and municipal enactments, and executed by individual energy, has efficient and positive control.

These views are not based on theory, but on opinions founded on observations, and corroborated by the experience of many scientific observers. The Registrar-General of England, who, in the fulfilment of his official duties, has for many years enjoyed a wider opportunity for studying the nature and cause of the great epidemics of the earth than perhaps any other man—the very man who has the most cause to know the power of this pestilence, says the *Medico Chirurgical Review*, “is he who most loudly proclaims how its career, and that of other epidemics, is to be arrested.”

“The causes of typhus, of influenza, of cholera, and the like (epidemic) diseases,” he affirms, “will not long remain in undisturbed possession of the earth and the air. * * Hydrophobia disappears, when the dogs which are liable to become mad or to be bitten, every summer are removed by police regulation; so will the other zymotic diseases give way when the putrid, decaying, noisome atmosphere, exhaled by church-yards, slaughter-houses, the tanks of dirty water companies, cess-pools, sewers, crowded dwellings, is purified and dissipated. The sewers and cess-pools, now under our houses, will inflict more pains and destroy more living than ten thousand mad dogs let loose in the streets, *and may as certainly be removed.*”*

Until right views are entertained by the public guardians of the public health, with regard to the nature of the predisposing and exciting causes of disease, and the relation which these causes bear to each other; until our Sanitary Commissions, and Boards of Health, are composed of scientific members of the medical profession, with power to act independantly of party or political influences, the public will never know the amount of controlling influence man really possesses over these dis-

* *Med. Chi. Review*, vol. v. p. 223.

eases ; they will not understand, what is capable of demonstration, that it is possible, not only greatly to mitigate the severity of these epidemic visitations, but to keep the greater number of them absolutely at bay ! And this is to be accomplished, not by stretching sanitary cordons around our borders, or by establishing quarantine restrictions and regulations at our ports of entry, but by attending to those sanitary measures, well understood at the present day, and which are sternly demanded for the removal of those local causes of disease which so greatly abound in our cities.

We are no advocates of the gloomy theories of Wallace and Malthus, that Providence, for the purpose of punishing vice, and in order to set bounds to the increase of mankind, hath ordained that pestilence and famine shall, from time to time, recur, that the earth be not overstocked, and men laid under the cruel necessity of killing one another. Rather would we maintain the benevolent doctrine of Talfourd, that there exists no decree of Providence, or any insuperable obstacle, in the constitution of nature to the development of her vast and untried resources ; for, surely, “ immense regions of unbounded fertility, long successions of spicy groves, trackless pastures, watered by ocean, rivers, formed to let in wealth to great continents, and islands which lie calmly on the breast of crystal seas, were not created for eternal solitude and silence. Until these are peopled, and the earth is indeed ‘replenished and subdued,’ the command and the blessing, ‘increase and multiply,’ must continue unrecalled by its Great Author.”

Still, we believe, that as the tornado, the lightning, and the storm, have their appointed task, so have epidemics their destined mission, and like these, are the agents of a wise and a benevolent Creator, and are intended to effect, ultimately, a removal of those social evils which, through man’s inhumanity to man, still “make countless millions mourn.”

What the Registrar-General has said of cholera, may, with equal truth, be said of that pestilence which has recently visited, with such awful devastation, several of our neighboring Southern cities, and which, unless we heed the many warnings we have received, may ere long make our crowded, neglected city its quarry. Of this epidemic, he says : “ It is a health inspector that

speaks in language which nobody can misunderstand ; it visits the prisoner in the hulks, on the polluted river ; the neglected lunatic in his cell ; the crowded workhouse ; the establishments for pauper children ; the sides of stagnant sewers ; the undrained city ; the uncleansed street ; the cellar and the attic, as well as the fair open quarters which strangers frequent and admire. *The oversights, the errors, the crimes of persons who, in responsible offices, have charge of the health and life of men, are proclaimed aloud by this inexorable voice !*"*

We do not entertain a doubt that when all the facts shall be known with regard to the history of this late, fearful epidemic, it will be found that the inhabitants of these doomed cities had been dwelling amidst pestilential, malarious exhalations, engendered in their own vicinities, and which, by corrupting the blood, had fully prepared the system for the certain reception and development of the epidemic poison.

The belief in the doctrine of the importation of the poison of cholera and of yellow fever is rapidly disappearing wherever, in the light of medical science, careful observations have been made ; and, although the doctrine is still maintained by multitudes, yet this constitutes no real ground for its being truthful.

"Man," says a quaint writer, "is a gregarious animal in the domain of thought as well as in that of action, and thus a set of notions, supported by some external plausibilities, be it in religion, politics, philosophy, or physic, once set a going, is like a snow-ball which a boy rolls along the street, until its size becomes too great for him to move, the increase having taken place by the absorption into the mass of various unattached particles of snow with which it was brought into contact ; so with a doctrine, which goes rolling along through the world, and in its course meets with vast numbers of unattached minds—minds devoid of definite ideas on the subject thus brought into contact with them, and like the particles of snow, they give in their adhesion. Nor does the parallel stop here, supposing the doctrine to be erroneous, for what a hot blast of sunshine is to the snow-ball, free and public discussion is to the doctrine—namely, the cause of its liquefaction and dispersion."†

* Med. Chi. Review, vol. v. p. 216.

† Trans. of the Prov. Med. and Surg. As., vol. xvi. pp. 83-4.

I have thus, gentlemen, endeavored, in as brief a manner as possible, by interrogating the revealed laws which govern the origin and propagation of contagious disorders, and by inquiries into the nature and influence of the predisposing and exciting causes of epidemic visitations, to show what control man may exercise, if he will, over the diffusion of these destructive forms of disease.

Of the changes demanded in our sanitary regulations to ensure protective measures, it is of course impossible, on an occasion like the present, to treat. Contagious diseases demand isolation—the separation of the affected from the healthful—but not quarantine restrictions. How entirely useless and absurd it must be for a community to attempt to bar out contagious affections by quarantine regulations, when all this class of diseases may be found, at all times, more or less existent in the midst of every large community? Over the laws which govern the diffusion of the poison of epidemics, man, as we have already seen, can exercise no control. But not so with the local causes of disease, from which emanate those decomposing matters whose introduction into the system imparts to all epidemics their greatest potency. Let those sanitary regulations be instituted, and carried out in the broadest and most comprehensive manner which look to a thorough and radical improvement of the condition of the poor, and to a removal of all those ills and imperfections in our social conditions, which are so manifestly indicated, on the occurrence of any epidemic, as being the special agents of disease—let all those improvements which are now demanded by medical science, for the welfare of humanity, be faithfully accomplished by appropriate legislative enactments and energetic municipal regulations, and the hitherto fatal epidemic will be robbed of its power. Do all this, you who stand as the public guardians of the public health, and you shall have complied thereby with the great requirement of Divine Benevolence, to “do unto others as ye would that others should do unto you.” Do this, and you shall have stamped the lintels and the side-posts of your own dwellings with the Paschal sign of mercy, and the destroyer will not be suffered to come in unto your houses to smite you or yours!

In conclusion, gentlemen of the medical class and of the med-

ical profession, let me again impress you with the importance of making yourselves thoroughly acquainted, not only with the laws of disease, but with the nature of those sanitary measures which are required for the protection of all large communities.

On you who are, and who are to be, members of our profession, will devolve the responsible labor of urging on, and of administering Sanitary Reform. In accomplishing this—and no other body of men, says the *Medico-Chirurgical Review*, can do it—the medical profession “will be fulfilling the most important duties which any class of men have ever rendered to a State in the history of the world. They will be indeed realizing the prediction of Descartes, who saw, in the unfolding of medical science, the amelioration of mankind. They will convince even those miserable skeptics, who dare to sneer at medical science because it cannot cure, like a God, those diseases which the self-indulgence, the sensuality, and the brutality of years have induced, or to remedy, as by a miracle, those ills which the neglect and cruelty of men have inflicted on their fellow men—they will convince even these detractors of a noble calling, that medical science, which had its birth in the weaknesses and necessities of the human race, is as the light arising out of darkness, which itself destroyed that from which it sprung!”*

European Practitioners.—No. I.

SIR BENJAMIN BRODIE, BART.

Sir Benjamin Collins Brodie, present Sergeant or First Surgeon to the English Queen Victoria, is of Scotch extraction, though born in the English town of Salisbury, some seventy years ago. His family migrated to that southern latitude about the middle of the last century, and, like all true Scotchmen, never again sought their native land. Sir Benjamin's father established himself there as a general dealer, at first on an exceedingly small scale; but gradually he extended his enterprise and connection. From being a “merchant” who

* *Med. Chi. Review*, vol. v. p. 226.

dealt in tapes, haberdashery, and general wares, he progressively became a journalist and a banker, too. He never, indeed, attained the celebrity of the noted English miser, "Jamie Wood," who in the neighboring town of Gloucester started, about the same time, a similar establishment, and ultimately carried it to such an extent, that he would have sold a yard of tape or a red herring at one end of his counter and immediately afterwards discounted a £10,000 bill (\$50,000) at the other. But old Brodie, though never so wealthy, became more important, chiefly in consequence of his newspaper, which was an instrument or species of property of which Wood stood in wholesome and most respectful awe. A connection in marriage with the celebrated Dr. William Hunter, brother of the illustrious John, also materially aided him in his prospects, and was the chief cause of his educating his present son to the profession of a surgeon.

Science has assuredly no more illustrious offspring to boast of than the immortal John. Devoted to it alone, he passed his life in neglect and penury, but not disgrace. Others might seize the hour—he preferred the day. He was contented to pass an age in comparative obscurity, but knew that posterity would be his bright inheritance. "*Carpe diem*," he said to them, well knowing that the morrow would be his. His brother aspired to tread the common but lucrative steps of fashionable practice—John preferred the more distinguished, though unproductive paths of science; and hence, while the reputation of the other—a distinguished physician, and, above all, obstetrician, in his day—has long since passed away, the once humble journeyman cabinet-maker of the Scotch city of Glasgow has left a name which distant nations still revere, and unnumbered generations of men will yet admire.

It was chiefly through the medium of his uncle, the late Sir Everard Home, that the subject of this sketch was connected with the Hunters. Sir Everard was a nephew of these illustrious men; and to his lasting shame it is recorded that, having been appointed scientific executor to John, he was guilty of the inconceivable meanness and atrocity of burning the whole of that great philosopher's unpublished works, in order to conceal the thefts which he had perpetrated on them

for the purpose of procuring a surreptitious reputation for his own dull and drivelling productions on similar topics. It is impossible now to conceive the incalculable loss which science has sustained by the nefarious conduct of this vile plagiarist. There was no subject Hunter touched that his genius did not illuminate ; and though his language was often humble, and his conclusions were sometimes erroneous, he still exhibited a profundity and an accuracy which all posterity must acknowledge. "*Nil tetegit quod non ornavit*" might truly be said of him. His brilliant genius reflected lustre on every subject on which it touched ; and mankind must deplore this loss, as well as stigmatize this turpitude, so long as medicine or surgery shall be cultivated as a science.

Having completed this iniquity, Sir Everard descended in infamy to the tomb ; but he had previously obtained the post of chief-surgeon to St. George's Hospital, a fashionable establishment in London, and to this he also succeeded in nominating his nephew, the present Sir Benjamin, as his successor. Sir Benjamin, we believe, in common with us and the world at large, repudiates the utterly abominable act by which science was robbed of so bright a treasure ; but, being of a temporizing nature, he has never ventured publicly to avow his opinion. The exact relations in which he stood to his uncle in this respect are unknown. It must, however, be mentioned to his honor that he has never ventured to justify such gross misconduct.

Having completed the usual branches of a sound but by no means highly classical education, Brodie entered as a student at the hospital we have mentioned, and rapidly rose to the post of its junior surgeon. On attaining this stage, however, he deemed it expedient to remain for a time in obscurity, his uncle having about that period attained a notoriety so unenviable that Sir Benjamin—wise even and calculating in those days—thought it well for the moment to withdraw comparatively from public notice, in order to divert attention from the reprehensible system of nepotism to which he owed his appointment. This system at that period was then in its zenith. "Do you know no old woman connected with the hospital?" asked the late Sir Astley Cooper of a young aspirant for

office, who then presented himself. "No," replied the innocent applicant, "aunt be gone and mother be dead;" and the *naïveté* of the reply so amused Cooper, who alluded to old women of the masculine order, that he felt interested in such simplicity and finally secured the young candidate a place. He was, indeed, afterwards severely taken to task for such profanity; but his defence afforded a still better illustration of the prevalence of the system. "How is it," he said to the Governors of Guy's, his own hospital, "that I can be represented as hostile to this species of appointment? Have I not one nephew here?—have I not another at St. Thomas's, over the way? Is not my stepson a medical officer of one establishment—my brother-in-law of another—Mr. Travers, my late apprentice, already introduced into a third berth—and am I not just on the point of installing another pupil into a fourth? What reason have I to decry the system?"—and the logic was unanswerable, though it only the more effectually proved the prevalence and utter abuse of the obnoxious influence and arrangement. What Cooper declared of the hospitals in the east end of London was equally true concerning those in the west. Talent and ability were wholly excluded unless accompanied by local influence or connection. Hypocrates or Celsus himself would have been refused admission as an official to their portals, if unconnected with some of the wretched and corrupt old women who governed them.

Brodie, accordingly, thought it wise to remain for some time in obscurity, but this he turned to advantage by a really recondite study of his profession. Even at this early period he discerned that the dashing or operative system of surgery which Cooper then had introduced, and Liston subsequently carried to such a butcherly excess, was erroneous. He wisely preferred combining medicine with surgery, and pursuing both as one great inductive science. Hence he was never an able operator, but always an intelligent physician. He had little regard for the mere triumphs of the knife, but placed great reliance on conclusions made from researches in pathology.

The advantage or superiority of this system soon disclosed itself. When he first entered upon general practice, in the year 1816, he was soon recognized as a reflecting and discrim-

inating physician, who exhibited all the ability of this division of the art under the aspect of surgery. He was not a showy man, but he soon acquired the reputation of being a sure one. In due time he was accordingly elected one of the incipient or "surgeons extra-ordinary" of George the Fourth.

Here he soon had an opportunity of distinguishing himself. Wardrop, the real surgeon—and still an ornament to the profession—had given offence at court by the freedom or honesty of his remarks ; and Cooper, who was called upon to supply his place, was guilty of a most unwarrantable species of *satire*. He had been called upon to remove a small tumor from the royal head, and the chief ground of complaint, it seems, was that the excrescence (a steatomatous one) was an "eye-sore" to the Marchioness of Conyngham, the royal mistress. Cooper—a zealous but most clumsy courtier—made fun of this by telling the story to his class, and as he insinuated that the seat of the disease was not the *occiput* but the very opposite extremity of the royal person, the idea of an "eye-sore" to a lady in this direction was of course highly offensive to royalty, however coarsely amusing to a lecture-room. Sir Astley accordingly soon got his *congé* from court ; and the able and upright but plain-speaking Abernethy having highly offended George the Fourth, by replying that he "would visit him in his turn," when commanded by that monarch to attend his favorite brother, the Duke of York, Brodie found himself suddenly, and at an unusually early age, introduced into the coveted elevation.

He merited it, perhaps ; and he attended George the Fourth on his death-bed in turn ; having the felicity, in the bulletins daily issued to an admiring people, of subscribing his name after Sir Henry Hallford's, the fashionable fribble who, as physician, attended four generations of English sovereigns. Of William the Fourth, too, he was likewise one of the principal surgeons ; but he has never yet been called to act in this capacity to her Majesty Queen Victoria. By some this is ascribed to his supposed reluctance to associate his name with Sir James Clark's ; but others—including those who know Sir Benjamin well, and that to such considerations he is not particularly sensitive—surmise that his absence is to be attributed to the

watchful jealousy of the court physician, who is sedulous to introduce to her Majesty no man abler or less uncouth in appearance than himself.

It must not, however, be supposed that Brodie owes his advancement exclusively to merit. On the contrary, corruption or parliamentary influence lies greatly at the bottom of it. So soon as he acquired a footing at court, he warily determined to avail himself of political aid, and accordingly got his brother, who had succeeded to the paternal till and newspaper, to purchase a seat in Parliament. Sir Benjamin assisted largely in this speculation, and thus obtained the support of the Whigs, who have been generally in office for the last quarter of a century. The brother, of course, gave the government the benefit of his vote in turn ; and during the rare intervals when the Tories were in power, Sir Benjamin was one of the most adroit species of courtiers. He was, in fact, supple as an eel ; obsequious to Sir Robert Peel while he was Premier, as he would have been to Mr. Feargus O'Connor, had the Chartists succeeded in placing him in that distinguished elevation.

Yet Sir Benjamin is not an unworthy man, though he cruelly killed Sir Astley Cooper more than once. We remember that portly baronet—himself one of the most accomplished medical tradesmen that ever existed—deploring loudly, and denouncing with equal harshness, the ingenious manœuvre by which Brodie had more than once combined to withdraw custom from his till. Sir Benjamin, according to Sir Astley, was guilty of the artifice of transmitting intelligence to the newspapers of Cooper's sudden and lamented demise, and thus profiting by the fabrication until the other was able to contradict it. On one occasion, if we may believe Sir Astley, the affair was so clumsily managed that he traced the rumor to his rival's coachman, and a great influx of patients ensued to Sir Benjamin before Sir Astley succeeded in ferreting out the stratagem. It is but fair to add, that if Brodie resorted to such schemes, he has himself been the victim of them in turn ; the last of these professional *tours de main* practised upon him being a full, true, and particular account of his having sustained (on paper) a double compound fracture of the left leg, while descending from an ordinary omnibus, in a London suburb.

But in petty intrigues such as these the life of a London medical man wears away. He appears a giant to the students or inferior practitioners who surround him, yet is in all respects really paltry and insignificant as themselves. The profession being never entered by any member of the aristocracy—doubtless in consequence of its requiring greater intelligence, or at least greater exertion, than either the army, the navy, the church, or the law, to the last of which they in rare instances resort—is voted low by the fashionable people who there govern the world, especially that little world which is designated the World of Fashion. A medical man has consequently nothing to occupy his attention except merely petty and professional considerations. He is not allowed to interfere in affairs of politics, or at least is for ever excluded from fashionable practice, unless he slavishly reëchoes the opinions of the aristocracy. Sir Astley Cooper, a Red Republican, and even a *Robespierreist* in his youth, was thus obliged to renounce all liberal sentiments on entering upon practice, and he even became an ultra-absolutist in his age. Sir Benjamin Brodie, from motives of personal opposition, became a Whig, but merely because Whig politics were then becoming fashionable, or at least influential. To all intents and purposes he was far more domineering and repulsive than Cooper, who endeavored rather to rule on the principle of *suaviter in modo*, and concealed his despotism under an aspect of *bonhomie*. Brodie, on the other hand, is a tyrant undisguised. He may trim to his political superiors—and a most palpable trimmer he is—but in medical matters he is a despot unconcealed. Neither the annals of St. George's, nor of any hospital whatever, present such a scene of tyranny, corruption, and intrigue, with utter exclusion of all who refused to become the slaves of the domineering and intriguing band, as that of which Brodie was the chief.

We say this with regret, but stern justice and truth require it. In all these respects Brodie has been a most objectionable man, and has set a most pernicious example. It is no excuse for him to say that he has not personally profitted by them, and that he has trained up no son to the profession. He has educated his son for a higher department—chemistry, or abstract science

—merely because, having now got rich, he himself considers medicine vulgar, and can leave him an ample—indeed an enormous—fortune. In favor of his nephews—his pupils—the latter of whom must have previously paid him or the hospital a handsome fee—he has always unscrupulously exerted the most reprehensible of all influences, and has just as ruthlessly crushed, or endeavored to put down, all who opposed him and the abominable system.

In other respects Brodie is entitled to merit. He is an able and industrious author, noted for the accuracy, the laboriousness, and, in many points, the originality of his works. His principal production—on “The Joints”—is a standard authority, and all his other books are of a high order. He writes with perspicuity and point, though without elegance. As a lecturer his characteristics are similar. He speaks with ease and precision—apparently the result of much labor—but never rises into eloquence.

The leading traits of Brodie as a practitioner we have already indicated. He is in fact a better physician than a surgeon, and undoubtedly he committed an error in selecting the latter department of the art for his study. For an operator, he is in no degree qualified, being one of the feeblest and least showy that ever handled a knife. But in the other department—in the accuracy of his diagnosis and ability, as well as success of his treatment—he has no superior.

Personally, Brodie is a little, shuffling, spare, active man, who moves about on the streets with incredible activity. He has generally then a smile on his face, but it is of a most lugubrious order, and can only be compared to an undertaker's at a funeral. It is evidently constrained, and he is palpably more at home when in private, or making his rounds at hospital. Then he moves about rapidly too, but with hands buried in the profundity of his breeches-pockets, and wearing a scowl upon his face positively frightful. Still Sir Benjamin is not a hard-hearted man. On the contrary, though fond of money, he will attend a humble student or struggling practitioner with equal assiduity and disinterestedness. The man is not so stern or

callous as he appears; and we should assuredly a thousand times prefer the harsh repulsive scowl of Brodie to the hollow and heartless smile of Sir James Clark. The one evidently is not so bad as he appears—the other is palpably and undoubtedly insincere.

Case of Superfœtation. Uterus Bicornis. By B. FORDYCE BARKER, M.D., Professor of Midwifery in the New York Medical College, Physician to Bellevue Hospital.

There are but few cases on record where the birth of a mature child is followed after the lapse of a few weeks or months by the birth of another. Dr. Cassan, of Paris, published a thesis "On Double Uterus and Superfœtation," in which he has collected forty-one examples of a double uterine cavity. In some cases the two uterine cavities open by two orifices into two separate vaginæ. In other cases, the uterus is divided into cavities by a rupture, having only a common cervix. Since the appearance of this thesis by M. Cassan, many cases of a similar character have been published in the various medical journals. In 1852, Dr. Kelly, then Resident Physician to the Blackwell's Island Hospitals, discovered in the autopsic examination of a woman who died in the hospital, a double uterus, with two ora tinæ and two vaginæ. Both vaginal canals had been well used in sexual commerce, and it was evident from the appearance of the tinæ of each that both uteri had been impregnated. A model of the parts is in the Museum of the N. Y. Medical College.

The authenticated cases of double impregnation to which the term superfœtation has been applied are very few in number. Dr. Churchill cites one case from the "Recueil de la Société d'Emulation," of a woman of Strasburg, æt. thirty-seven, who was delivered of a lively child on the 30th of April. The lochia and milk were soon suppressed. On the 17th of September, of the same year, (about four and a half months after the first delivery,) she brought forth a second apparently mature and healthy child. It is stated that on the death of the woman

the uterus was found to be single. We look upon this case as somewhat apocryphal.

A case is related by Desgranges, of Lyons, of a woman who was delivered on the 20th of January, 1780, of a seven months child ; and on July 6th, 1780, five months and sixteen days after the former birth, she gave birth to a second, which had apparently reached its full time.

Dr. Maton published a similar case in vol. IV. of the Transactions of the College of Physicians, London. Mrs. T., an Italian lady, but married to an Englishman, was delivered of a male child at Palermo, Nov. 12, 1807. On the 2d of February, 1808, not quite three calendar months after the preceding accouchement, she was delivered of a second male infant. Dr. Maton assured Dr. Paris that "both the children were born perfect : the first, therefore, could not have been a six months child. Other cases are quoted by Beck, Velpeau and Cuming.

In the thesis of M. Cassan is related the following case, which occurred to Mad. Boivin. "On the 15th of March, 1810, a woman, aged 40, gave birth to a female infant, weighing about four pounds. As the abdomen still remained bulky, Mad. Boivin introduced her hand but could find nothing in the uterus. But her examination led her to suspect that there was another foetus, either extra uterine or contained in a second cavity in the womb. At length, on the 12th of May, a second female infant was born, weighing not more than about three pounds, feeble and scarcely able to respire. The mother assured Mad. Boivin that she had no connection with her husband, (from whom she had been sometime separated,) except thrice in two months, viz. on the 15th and 20th of July, 1809, and on the 16th of September following." Dr. Churchill remarks : "In this case there can be little doubt of the existence of a double uterus, and it would be difficult to disprove that the second child was not the fruit of the last conception, and if so, a clear case of superfœtation."

The following case, from the Brit. and For. Med. Chir. Rev. vol. 3, is quoted from the Bulletin delle Science Mediche, vol. xiii, p. 89 : Gretena Boratti had borne six children, all at their full time, (the hand having to be introduced for the removal of the placenta on each occasion,) and was delivered of her seventh,

a full-timed vigorous infant, on the 15th of February, 1817, the placenta on this occasion being spontaneously discharged. The pains ceased, but the abdomen still remained large and the movements of another foetus were perceived. The tumor was confined to one side of the abdomen, and before the birth of the first child a furrow along the median line seemed to separate the tumefaction into two parts. On the 14th of March, a second well-formed child was born. The first child lived 45, the second 52 days. In 1822, she had another child at full time. In 1847, she died of apoplexy, and the uterus, normal in respect to its os and cervix, was found to be bicornuated at its fundus, a fallopian tube being inserted into each of its cavities. The preparation is preserved in the Museum at Modena.

Dr. J. T. Kannon states (in the New Orleans Med. and Surg. Jour., May, 1855) that he was called in consultation to see a woman who had been delivered early in the morning of a child. There were still all the external appearances of another child remaining, the womb being entirely empty, the placenta having come away. Owing to great prostration consequent upon the birth of the child, and the womb being empty, Dr. K. supposed that laceration had occurred, and the foetus had escaped into the cavity of the abdomen. He passed his hand into the empty womb and found its walls solid, not the least appearance of a rupture having occurred. The probability of a rupture with a double womb suggested itself to his mind, and a further examination revealed the correctness of his opinion. Looking upward and forward, near the edge of the symphysis pubis, he found the os uteri of another womb, with the head of the foetus resting directly on the pubis. There was no effort making on the part of the womb to expel the foetus, and the usual remedies failing to bring on the pains, an attempt to turn and deliver was tried, but the peculiar position occupied by this second womb rendered it very difficult. As by this effort it was discovered that the foetus was dead, he resorted to the crochet, and brought away a child weighing six or seven pounds. This lady was the mother of five children, but never previously had both wombs been impregnated at the same time. The septum was horizontal with the os tincæ of the lower and posterior womb, in the natural position, the anterior considerably ele-

vated. We are at a loss to understand why forced delivery was resorted to in this case, "as there was great prostration consequent upon the birth of the first child," and "there was no effort making on the part of the womb to expel the foetus."

The following case recently occurred in this city. I am indebted to Dr. Bigelow for an introduction to the family from whom I received the history of the case. I must also express my thanks to Dr. Burke, who attended the patient at her second confinement, and who kindly furnished me with the history of the second labor. Mrs. ——— was born in Ludlow Street, New York, in May, 1837. She began to menstruate at the age of fourteen, the function occurring regularly about every eighteenth day, and generally continuing over a week. She was married Oct. 9th, 1854. After marriage she menstruated *twice*. On the 10th of July, 1855, (nine months and one day after her marriage,) she was delivered of a healthy boy, apparently at full time. She was attended at this confinement by Dr. Finnigan. The patient states that after her delivery a bandage was applied, but finding it very painful she removed it a few hours afterwards. The lochial discharge continued about a week. She nursed her child, which is now active and healthy, and of the average size of children of its age. The patient was up and about the house in three weeks after her confinement, although her abdomen seemed to be nearly as large as before her labor, and she suffered from movements in the left side. On the 22d of September, (74 days after the birth of the first child,) she was again taken sick, and Dr. Burke, of Grand Street, was called to see her, in the absence of the family physician. On his way to visit the patient, Dr. B. learned the previous history of the case from her husband. He found the patient suffering from severe paroxysmal pains, and on applying his hand to the abdomen, he perceived that during the paroxysms the uterus was contracting. He at once made a vaginal examination, by which he detected a foetal head low down in the pelvic cavity. On announcing this to the parent and her friends, the doctor was told that "he did not know what he was talking about, for there was her baby, nearly eleven weeks old, asleep in the cradle." But the speedy birth of a little girl soon convinced them that the opinion of the doc-

tor was correct. Her convalescence was protracted beyond that after the first labor, the lochial discharge lasting for nearly three weeks. She nurses both of the children, and both are apparently healthy, although the last does not seem to grow very rapidly. There is a very striking resemblance between them, excepting only the difference in size.

On the 24th of October, Mrs. ——— called with her husband, and I was permitted to make a careful physical examination. The external organs of generation, the vagina, and infra-vaginal portion of the cervix were perfectly normal, excepting only that the cervix was somewhat enlarged and patulous. On passing Simpson's Uterine sound, the point of the instrument could easily be felt through the abdominal walls in the left iliac region, about two inches above the superior border of the pubes. The cavity from the os tinæ measured four and a half inches. On carefully withdrawing the sound and again introducing it, after repeated trials I succeeded in passing it into another cavity about an inch to the right of the median line. The point of the instrument could be felt about a half inch above the crest of the pubis. This cavity measured three and one-eighth inches. The septum seemed to commence about an inch and one-eighth from the os externum, having a common cervical canal to both uterine cavities. On a rectal examination, the left ovary, somewhat enlarged and sensitive to pressure, could be readily felt. The right ovary could not be found by the rectal or the recto-vaginal touch combined.

Selections from Favorite Prescriptions of Living American Practitioners. (Continued.) By HORACE GREEN, M.D.

Tonics and Stimulants.

We have spoken of the *phosphate*, the *malate*, and the *iodide* of manganese as being among the most important of the pharmaceutical preparations of this metal. With some practitioners, the *carbonate* of manganese, in combination with the carbonate of iron, is considered a valuable therapeutic agent. These two carbonates, combined in equal quantities, and ad.

ministered in doses of from five to ten grains daily, constitute a favorite remedy, with a distinguished practitioner of Massachusetts.

R Manganesii carb.

Ferri carb. aa. 3j

Sacchar. alb. pulv., 3ij

Misce et in pulv. xv. divide, quorum, cap. ij., vel. iij., quaque die.

Should a liquid preparation of these remedies be preferred, they may be exhibited, combined with some vegetable tonic, as in the subjoined formula :

R Manganesii carb.

Ferri carb. aa. 3ij

Tinct. columbæ,

Syr. sarsa. co. aa. 3iij

Misce. Capiat coch. min. bis in die.

This combination of the carbonate of manganese and the carbonate of iron is especially appropriate for the improvement of that condition of the system which is attended with an ulcerative action of mucous membranes. In the treatment of that often troublesome affection, ulcerative sore mouth, this fero-manganese preparation, it will be found, will prove to be particularly efficient :

R Manganesii carb.

Ferri carb. 3iss

Potass iodid, 3ij

Tr. Gentianæ co.

Syr. sarsa. co. aa. 3iij

Fiat mistura. Capiat cochleare parvum bis in die.

In mesenteric obstructions, and for the discussion of glandular swellings in any part of the body, the above preparation is a valuable remedy.

The alkaloid, and the extract of nux vomica, are ordinarily arranged under the head of Excitants. We have employed these preparations, however, with great advantage, in cases where both tonics and excitants were indicated. Strychnia and the extract of nux vomica, as therapeutic agents, it is generally supposed, produce the same, or nearly the same effect upon the animal system. By some practitioners it is believed that the extract determines more to the head than strychnia. This salt may be exhibited in appropriate doses without pro-

ducing any obvious effect on the cerebral circulation. The alkaloid, therefore, should be preferred in those cases where we would excite the powers of the nervous system without increasing the action of the brain.

R	Extract nucis vomicæ,	grs. xxxii
	Tinct. cardamon,	
	Syr. zinziberi, aa	℥j
	Aquæ font.,	℥ij

Fiat mistura, cujus cap. gtt. xx., vel. xxx., bis terve in die.

In chronic, gastric affections, with diminished energy of the digestive powers, the administration of the above preparation will, in many cases, by improving the appetite, and increasing the powers of assimilation, impart tone and energy to the whole system.

With one of our oldest and most experienced physicians the following pills, exhibited, one night and morning, is a favorite remedy in chronic, gastric affections, chronic diarrhœa, &c.:

R	Extract nucis vomicæ,	grs. iv
	Extract opii,	grs. vi

Misce. Fiat massa, et in pilulæ xvi. dividenda.

On account of the great insolubility of strychnia, this alkaloid is generally administered in the form of pills, the salt being made up with the conserve of roses, or the extract of gentian, or of liquorice. It is of importance, in the exhibition of strychnia, in many cases, gradually to increase the dose; but this is with difficulty effected, when the medicine is made up in the form of pills. A perfect *solution* of the salt may be obtained in the following manner; and we would advise that prescriptions be made up from such a solution:

Solution of Strychnia.

R	Strychniæ,	grs. xii
	Acidi acetici,	gtts. lx
	Alcohol,	℥j
	Aquæ font.	℥xi

M.

The above solution may be administered in doses of from ten to thirty drops, twice or thrice daily. Beginning with the smallest number of drops, and gradually increasing the dose, the medicine may be continued until its specific effects on the

system are slightly induced, when the remedy should at once be arrested for a few days, and its administration be recommenced, if necessary, beginning again with the minimum dose. We have found it a most valuable and efficient remedy in some obstinate forms of neuralgia.

The following preparation may be employed often with great advantage in the treatment of chronic, gastric irritation :

R Solutio. strychniæ, ʒss
Tinct. cardamon comp. ʒiijss

M. Cap. coch. parv. ter in die.

A physician of much experience in the management of malarious diseases, recommends the following mixture as a most efficient remedy in the treatment of obstinate cases of intermittent fever :

R Solutio. strychniæ, ʒij
Quinæ disulphatis, ʒss
Tinct. ferri sesquichloridi, ʒss
Aqæ fontanæ, ʒiss

Fiat misturæ, cujus sumatur cochl. parvum, quartâ quâque horâ, intermissionis tempore.

An eminent German physician, M. Frisch, has recently recommended a similar combination, in the treatment of intermittents, when the sulphate of quinia fails. This physician prescribes "from six to ten grains of the rasped seed mixed with two ounces of the cinchona bark, or with twelve grains of the disulphate of quinia, to be taken in divided doses in the intervals of the paroxysms." In some forms of neuralgia we have derived more prompt and decided effects from the use of the strychnia, when administered in combination with an anodyne, as in the following combination :

R Solutio. strychniæ, ʒiij
Solutio. morphiæ (Majendie), ʒiss
Tinct. gentianæ, ʒij
Syr. acaciæ, ʒiss

M. Exhibi cochleare parvum, quaterve ter in die.

Not only in the diseases already named, have the extract of nux vomica and strychnia proved useful, but in hemiplegia, in general paralysis, and in spasmodic asthma, great advantage has been derived from the use of these remedies. In administering strychnia in paralysis we obtain the greatest benefit

from its use, if the dose is gradually increased, until slight tetanic movements of the paralytic limbs are produced.

Administered alone, or in combination with the tincture of lobelia, strychnia has proved servicable, in some instances, in the treatment of spasmodic asthma.

℞ Solutio. strychniæ,	
Tinct. lobeliæ,	aa.
Syr. toltutan,	3ij
	℥iiss

Misce, quorum date coch. parv. ter quaterve in die.

In one very common form of dyspepsia, attended with derangement of the biliary organs, the subjoined combination constitutes a most valuable remedy, administered in doses of one teaspoonful three times a-day.

℞ Hydrarg. bichloridi,	grs. iv
Tinct. nucis vomicæ,	
<i>vel</i> solutio. strych.,	℥ss
Tinct. rhei comp.,	℥iiss
Syr. aurantiæ,	3ij

Misce.

In the administration of so powerful a remedy as strychnia, much caution should always be observed. As it is one of the most valuable of our medicinal agents, every practitioner should become acquainted with its therapeutic powers, and with its best modes of administration. By commencing with small doses, and gradually increasing the amount, the remedy may be continued with safety, until slight tetanic twitchings of the muscles are produced.

In one case of most obstinate and long-continued neuralgia, occurring in a lady of this city, we administered the strychnia, and gradually increased the dose, until the spasmodic movements of the muscles were quite apparent, but without any abatement of the disease. Commencing with the original dose, the medicine was again administered up to the same point; and this was done for the third time, and with the effect of completely arresting the disease. In most cases, however it will not be necessary to continue the remedy until these tetanic movements are manifested.

Obstetrical Extractor. By Dr. A. C. BUFFUM, Chicago, Ill.
(Two Plates.)

In presenting the Extractor to the Medical Profession, it is not necessary to detract from the value of the obstetrical forceps so long in use throughout the world ; neither is it necessary to condemn their use, for it cannot be denied that they have, in the hands of careful and experienced accoucheurs, been instrumental in saving the lives of many mothers, and sometimes both mother and child. But, notwithstanding, there are cases often occurring where the forceps cannot be used with safety to either mother or child, and it is to fill these exigencies rather than condemn the forceps that I am desirous of introducing the Extractor. For while the forceps are so cumbersome and difficult of application, the Extractor is small, and so simple in its application that it may be applied while making the usual examination, with little or no pain to the patient. Therefore, as the Extractor may be used in all cases, it not only does away with the use of the forceps, but furnishes the physician with an instrument that may be used in all cases where an instrument is necessary.

The principle upon which the Extractor works is plain and simple, being that of introducing two small curved and jointed steel fingers into the os tinæ upon the side of the head of the child, and circumscribing the same, placing a net cap upon the head, to which the extractive force is applied.*

The Extractor consists of two finely-polished steel fingers, each twelve inches long, one-half of an inch wide, and one-eighth of an inch thick ; six inches, or one-half of the length, being curved and jointed, so as to fit any shaped head ; to which is attached a silk braid cap, so perfect in its construction that the whole instrument, when folded, ready for application,

* It is but just to observe, that for the principle upon which the Extractor works, I am indebted to Prof. Evans, of this city ; for he caused an instrument to be constructed, with two fingers, headband and down-straps, some years ago, which he introduced to the American Medical Association, and subsequently to his classes in Rush Medical College.

is but one inch wide, and one-eighth of an inch thick, the cap forming a soft cushion on either side of the fingers, as seen in fig. 2.

FIG. 1.

FIG. 2.

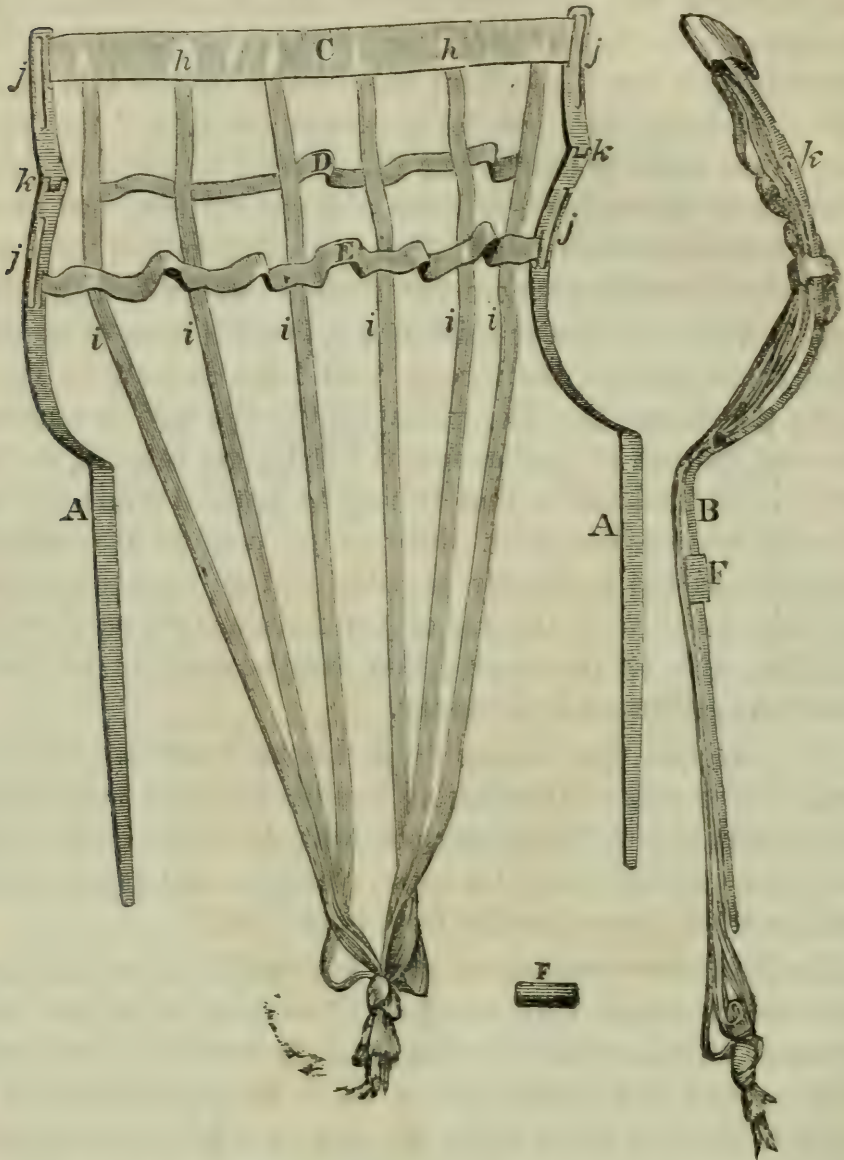
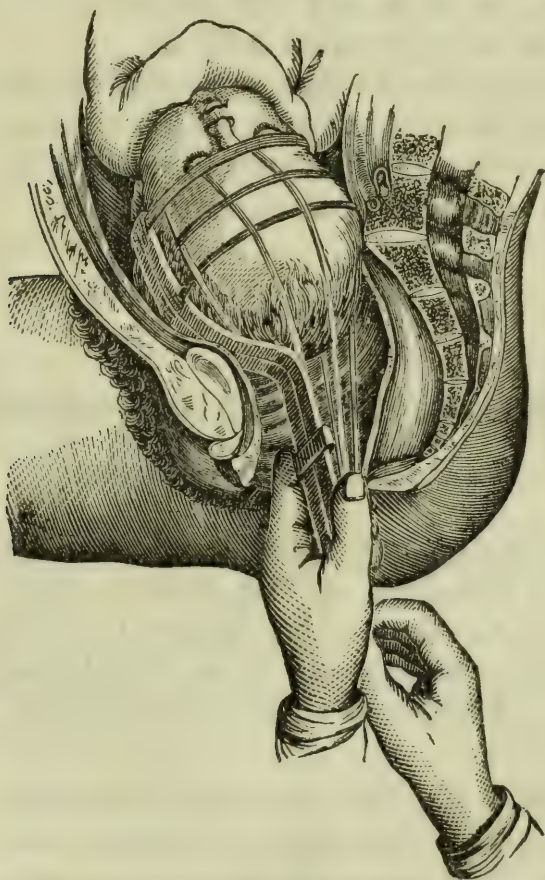


Fig. 1 gives a perspective view of the instrument, A the fingers, k the joints, and j j the fenestræ in the fingers, C the principal head-band, which is nine inches long and one inch wide, extending from finger to finger, to which the down straps. i i i, are firmly stitched; D a cross band, holding the down straps in their proper position, while E is a double band,

one-half inch wide, fifteen inches long, extending from finger to finger, through which the down straps pass. This band carries and holds the down straps in their proper position over the greater diameter of the head of the child. Without this stay they are liable to slip around the head whenever we attempt to make traction on either side of the head, as is necessary in rotating or moving one side at a time. F, the slide that holds the fingers in a position with each other; i i i i i the down straps, each being eighteen inches long and one-half of an inch wide, composed of sewing silk, sufficiently strong for any practical purpose. These down straps serve as the warp of the cap, and a handle to which the extractive force is applied.

FIG. 3.



To prepare the Extractor for application, double the bands C and E at hh and draw the folds through the fenestræ jj, until the fingers of the instrument are brought together, giving one-

half of the net to each finger, when the slide F is to be placed upon the handles A A, and the instrument warmed in warm water and well lubricated with soap or oil.

The instrument being prepared as seen in fig. 2 for application, the patient should be placed in a comfortable position, either on her back or side, two fingers of the left hand should be introduced into the orifice of the uterus, when the instrument should be carried carefully upon the fingers into the uterus upon the side of the head, thence following the convexity of the head until the angle of the fingers of the instrument strikes the top of the head, when the slide F is to be removed and the fingers of the instrument gently separated and carried around to the opposite side of the head, until they meet, when the slide F is to be placed upon the handles, which holds them firmly together, or in other words, buckles the cross bands of the net together, as represented in fig. 3.

All is now ready for the force to be applied, but care should be taken to act in company with the labor pains, if any exist, the handles serving as a director in rotating the head, while the force is to be applied upon the down straps.

PART II.—REVIEWS AND BIBLIOGRAPHY.

“Nullius addictus jurare in verba magistri.”

The Cause and Prevention of Yellow Fever, contained in the Report of the Sanitary Commission of New Orleans. By E. H. BARTON, A. M., M. D., Chairman of the Sanitary Commission, President of the Louisiana Society, and of the New Orleans Academy of Science, &c. Philadelphia: Lindsay & Blakiston. 1855. 8vo. pp. 282.

Severe epidemics, like other great public calamities, are epochs in the history of nations. They produce revulsions which often result in some good. They arouse the people among which they prevail from the apathy occasioned by long-continued prosperity; they quicken the sluggish movements of corporations toward the immediate accomplishment of some long-desired sanitary act, and urge the

energies of individuals to the investigation of their causes, their means of removal and prevention.

It seems almost a reproach to our professional confrères at the South, where yellow fever has so frequently prevailed, that every effort has not already been made to disclose the secret workings which have so seriously stricken them down with disease. It needed the special intimations conveyed in the malignancy of the epidemic of 1853 to re-arouse them from the relaxation into which they had fallen during several successive years of comparative freedom from the fever ; so accustomed do we become to the presence of lesser evils, that their warnings are unseen, and of course unheeded. We do not mean to say that nothing has been done to illuminate the subject of yellow fever. On the contrary, there is no class of disease which has received so much special attention—the literature of which is so voluminous ; yet, on the other hand, it has rarely been the case that individual exertions have been seconded by municipal aid, or that such a comprehensive view has been taken of the subject as its importance demands. Monographs are plenty, and histories of particular epidemics are very numerous, but the experience of single observers is limited, and the resources of unaided historians are finite.

In Dr. Barton's work, however, we find the results produced by a large city, interested in her own sanitary condition, coming to the aid of individual exertion

The history of the epidemic of yellow fever of 1853, which raged to such an unusual extent throughout the southern limits of our country, is not one of suffering and death alone. It shows us the benevolence, the charity, the self-sacrificing spirit of a whole nation ; it records the sympathy, the devotion of one section of our country to another ; and while it relates in one paragraph the sad story of an immense mortality, it strives in another to draw a lesson of usefulness for the future. The present year has witnessed another portion of our country invaded by the fever, to such an alarming extent that cities have been rendered desolate by it, commerce impeded, and the avenues of trade transformed into highways of pestilence. The scenes of panic and suffering which Norfolk and Portsmouth have presented are hardly equalled by the memorials of the plague of a past age. They have elicited a repetition of the good deeds of 1853, and the gradual approach of this disease from its southern home towards our own city, has excited some fears that another year may find it in our midst, requiring a reciprocation of

sympathy. It becomes, therefore, those who have a guard over the interests of the community, who have the keeping of the health of our city in their power, to carefully learn from the sad experience of our neighbors, to take such measures in time as their dearly-bought knowledge teaches, to prevent the eruption from any local causes, or its propagation from without.

To us at the North, yellow fever practically is mostly unknown. Few of us were yet in the active duties of our profession the last time it was epidemic here. From time to time, however, our attention has been greatly excited by its ravages in neighboring cities, and by its apparent approach to our own, so that, at no period, has the public and professional mind been more thoroughly awakened to the importance of a complete investigation of all subjects tending to throw the least light upon this one, than at present. This volume, then, is quite apropos, and is doubly welcome from the fidelity of execution, and the highly practical and scientific manner in which it has been prepared.

It appears from Dr. Barton's work that, previous to 1853, the sanitary condition of New Orleans had been sorely neglected ; but the malignant character of the fever which decimated its population, clogged the wheels of its commerce, and changed the bustle of its busy streets into the quiet of a doomed city, aroused the attention of the city fathers, and a Sanitary Commission was appointed, whose duty it was :

"1st. To inquire into the origin and mode of transmission or propagation of the late epidemic yellow fever.

"2d. To inquire into the subject of sewerage and common drains, their applicability to the situation of our city, and their influence on health.

"3d. To inquire into the subject of quarantine, its uses and applicability here, and its influence in protecting the city from epidemic and contagious maladies ; and

"4th. To make a thorough examination into the sanitary condition of the city, into all causes influencing it, in present and previous years, and to suggest the requisite sanitary measures to remove or prevent them, and into the causes of yellow fever in ports and other localities having intercourse with New Orleans."

Dr. Barton was the chairman of this Commission, and in the distribution of the subjects to be considered, the last division was given to him, and this report is the fruit of his researches. The present volume is a reprint of his paper, separated from those of the other members of the Commission, with which it was originally embodied, as presented to the City Council.

It was fortunate for the city of New Orleans that such a man was found to enter upon the laborious duties of this part of the Commission—one whose previous labors had eminently fitted him for grasping the subject in its full extent, and whose predelections were strongly interested in the pursuit of this branch of his profession. Science is greatly indebted to him for the masterly manner in which he has performed his duty, the fearlessness with which he has spoken disagreeable truths, and the boldness with which he has advanced his own views.

In his earnest search after the causes of the insalubrity of New Orleans, Dr. Barton has investigated the mortuary returns for that city, for a long series of years, and, as far as was in his power, he has accumulated every official record of the atmospherical and terrene conditions which preceded or accompanied every epidemic of cholera or yellow fever. Upon these records he has based the reasoning from which the following *postulata* have been deduced :

“1st. That a close junction and combination of the metereological and terrene conditions (referred to) is absolutely indispensable to the origination, transmission, and duration of yellow fever everywhere.

“2d. That all the terrene conditions referred to are controllable and removable by human agency, and, consequently, are separable from the meteorological conditions, at man’s option, and at man’s pleasure.

“3d. That the atmospherical element can be much modified and ameliorated by man’s influence.

“4th. That the irresistible corollary from the *probata* are, that yellow fever is an evil, remediable and extinguishable by human agency.”

It is candidly admitted that New Orleans is the sickliest place in our country, it being proved by the comparison of statistics. It is known by the reports from different cities that a little over two and a half per cent. is the average mortality in these cities, while in New Orleans it has reached nearly six per cent., and for many years was even above this figure. In view of these seartling facts, Dr. Barton asks, “If it is possible that this is a *necessary* and *inevitable* state of mortality.” Many other cities have been known, at some period of their existence, to have been equally sickly, but sanitary reform, the investigation of the causes of their great mortality, and the removal of these causes, have converted them into salubrious places. A like proceeding is urged in reference to New Orleans, and an attempt is made to show, by an array of facts, that the sickly connition of that city is remediable.

In attempting this investigation in reference to the epidemic of 1853, the medical constitution of that year is spoken of ; and by this is meant, "such a combination of climate and terrestrial conditions as influence the constitution of man." Each month is considered separately, and its meteorological phenomena studied and brought into apposition with the character, amount of sickness, and mortality of that month. To this section is attached a classified table, which greatly facilitates the comprehension of this part of the subject, from which we learn that "the contagious diseases had their greatest prevalence in September. The class of nervous diseases had its culminating point in August ; that of the pulmonary affections again reverses this figure." The climatic peculiarities of the year are summed up in these words : "The annual *average temperature* in 1853 has been less by about two degrees, and this has occurred during the rains. It has been accounted for by Professor Blodget by the tropical character of the season, the daily curve of temperature being much less sharp during the rainy season, hence the daily mean of temperature is less than usual ; this has been specially verified here. *More rain* has fallen than any year during the last thirty, excepting a fraction more in 1839. The *barometer* has been much higher than any other year I have ever noted it, and continued so until some time after the occurrence of the cholera in December. The *winds* have been nearly one-third more easterly than during the last five years, and especially during the epidemic ; more northerly ; not half the usual southerly winds ; about one-third more of westerly winds. In this respect, what has eminently distinguished the season has been the unusual occurrence of *calms*, or stagnant state of the atmosphere, for the whole year. It has been about four times as many as usual, and for August more than eight times as many calms as the average of the last five years. The "*drying power*" has been greater for the whole year than usual, and especially for December. The *radiation* was materially different, as is usual, in yellow fever years ; the highest amount existed during the yellow fever (and this is commonly in September). This year the largest mortality occurred during August, accordingly the highest radiation occurred then. In a series of non-yellow fever years, the culminating point existed in May—vegetation probably then requires it most."

The *effect* of this medical constitution upon the inhabitants of New Orleans is the subject of another section. In this Dr. Barton separates the native population from the foreign, and endeavors in this manner to find out the "cost of acclimation." These data are also

admirably arranged in the form of a table for convenient reference. At a glance we see that no class of citizens is exempt from the fever. The native-born citizens present the least per-centage of deaths, while the foreign population, the Irish and German particularly, suffered the most ; and among native Americans the mortality was in the inverse ratio as their nativity was more remote from the seat of the epidemic, though the North-Western States furnished more fuel to the fever than the North-Eastern, which fact was alleged to be owing to the difference in their habits of life.

Having discussed the "medical constitution," and shown its action upon the inhabitants of the place where it prevailed, Dr. Barton proceeds in another section to speak of the "epidemic constitution"—"of the unusual circumstances and conditions from which epidemics derive their power and spread themselves." In this connection the subject of contagion is expressly defined in its relation to epidemics, and we are glad to see that the opinion, so generally gaining ground at this time, has received additional strength by the array of facts adduced by the author. This constitution, (the epidemic constitution,) says Dr. Barton, "in the nature of things, from its wide, pervading, direct, and almost immediate influence over an extensively spread population, must be atmospherical, and we state them *en passant* now, that the admission of this principle—the admission of a wide-spread *atmospherical* element, as a necessary constituent, draws after it an important if not inevitable inference, in its being a conclusive answer to all averments to its contagious qualities!—not that a contagious disease cannot become epidemic, (although it is very rare,) but the difference is that a contagious disease never loses that quality, and epidemic disease does, directly it is removed out of the sphere of the epidemic atmosphere, which always has bounds and limits, however extensive it may be, and beyond the limits of the localising conditions which will be pointed out hereafter."

Yellow fever then is not considered contagious, as it would be carried into remote regions under all circumstances. This we know not to be the case, unless certain conditions are present which are included under the head of the "epidemic constitution," for cases of yellow fever can be carried, and are frequently carried, from place to place, without engendering disease. On the other hand, if this "epidemic constitution" exists, the approach of a least germ of disease fires the whole region in which this condition is found. So much so is this the case, that during epidemics we frequently witness all existing diseases taking on the character of the epidemic, or so changed in their phe

nomena, that by degrees the original disease is lost in the epidemic characteristics.

We cannot follow the author out in his whole line of reasoning. Suffice it to say, he announces, most emphatically, the *non-contagious* character of yellow fever. This is an important point, for in all severe epidemics, the preëccupancy of the community, as to its understanding of this question, either favors by a wide-spread panic—as was undoubtedly the case in Portsmouth and Norfolk—the rapid increase of the disease, or furnishes an additional means by which a community can erect sanitary barriers to the propagation of a dreaded evil. In the views of a contagious property we see the evidences of a supine fatalism, which will not answer for this day and generation who believe in causes, which being removed, prevent the occurrence of the effect.

The atmosphere, then, is the diligent conveyor of the fatal poison, which penetrates every locality, insinuates itself into every habitation, and from which no one can escape. In some places it locates itself, in others it passes by innocuous, and in its vagaries *appear* to follow no law, and to be subject to no regulation. Yet this is not the *fact*. Other than atmospherical conditions must be present. There must be some local condition to attract and keep the epidemic influence; this being present, we witness the deplorable fidelity to the inevitable law of epidemic.

There are two conditions—the atmospherical and localising conditions are the “two blades of the shears of fate,” which are requisite for the development of an epidemic.

What are these two conditions? We are informed that they are, 1st. Meteorological; and, 2d. Terrene.

Under the first head, which is treated as a compound condition, we are brought to the valuable data compiled and noted by Dr. Barton, and in a scientific point of view, this is the most valuable portion of the work. Tables are drawn up to represent the different meteorological elements, with their degrees of existence during the whole year, as well as during the period of the epidemic, and from the observation of the phenomena here indicated, Dr. Barton was able to predict the invasion of an epidemic long before it actually appeared.

A high temperature, continuing for a certain length of time, was found essential for the production of yellow fever. Yet a temperature above 90° was too high for its development, and a degree less than 79° too low. An average temperature of about 80° was the most favorable for the production of this fever, when conjoined to the

other meteorological and terrene conditions. In this connection, it is observed, "that a temperature of above 80° is fatal to the plague, and that typhus gravior is developed between 30° to 60° . Below this fever does not occur at all." But a high degree of temperature alone cannot produce yellow fever, although continued for a long time. Other elements must be present, and the most effective among these is humidity.

"Humidity," says Dr. B., "is certainly the greatest when connected with a high temperature, and is most influential in the production of fever." Reference is made to a table in which is shown "the difference in the mortality of the same people in the healthy country of Holland and Belgium, where the average annual temperature is less than 50° , and here where it is upwards of 67° , with an average dew point of less than 43° , and here where it is near 62° , and with an average 'temperature of evaporation' of less than 47° , and here where it is 64° ." "But," continues Dr. B., "let it be distinctly understood also, that fevers do not prevail in *proportion* to the height of the dew point or amount of moisture *alone*, but that they *do not prevail without a high dew point*—that is, that a large amount of moisture with a high degree of heat is essential to the evolution or development of the high grades of fever." — "Moisture, no doubt, is the controlling sanitary condition *at all high temperatures*." The rainy season is observed to be the sickly season in nearly all countries, but how humidity acts to favor this condition is not so easily explained. The author says, "it relaxes and prostrates the system, is a matter of common experience, that it prevents the elimination of effete and worn out excretions, that it debilitates, by excess of action, the healthy functions of the skin and lungs, every one will acknowledge who has experienced it—diminishing the decarbonising power of the atmosphere, which is always lessened as the temperature is high, air expanded and saturated with humidity. When the hygrometry changes to a dry air, a sensation of elasticity is at once experienced; when it becomes high, langour and prostration has to be endured; that our health is influenced in a corresponding degree, is fortunately now fully established. *High temperature* may produce the physical susceptibility—*moisture* may be the medium of agents from our second condition, and when they are all in excess, the malignancy of the disease will be proportionate." The dew point of yellow fever is indicated as from 70° to 80° , this fever rarely existing when it is less than 60° . The dew point of plague is supposed to be 10° less, that of typhus gravior from 35° to 45° , while that of cholera in this climate is estimated from 48° to 74° .

Solar and terrestrial radiation are incidentally spoken of, but no positive evidence is given of their influence in the production of fevers. By the first is meant the temperature in the sun in contradistinction to that in the shade, the difference being the radiation ; while by terrestrial radiation is meant that proceeding from bodies on the earth. We feel the effects of both, and instinctively avoid exposure to either; but neither have been thoroughly investigated in their relation to disease. This Dr. B. urges upon those who have made meteorology a study, to more closely investigate particularly in reference to the etiology of disease. He has noted the radiation of the year, and has incorporated his observations in the form of a chart or table, easy to refer to at a glance.

Winds also are included among Dr. Barton's observations, and the prevalence of certain winds are particularly remarked, and it is viewed not as a coincidence but as a fact, that the most frequent winds were from the quarter which brought the most moisture with them.

Such are the meteorological conditions which have been carefully observed throughout the year by the author of this Report. We commend his observations to all who are interested in the subject, and especially urge that the example may be followed by others whose duty it is to attend to the sanitary condition of cities. A series of observations, such as we find recorded in the sixth section of this Report, with the accompanying tables, would prove of the greatest value to science, and the important deductions to be drawn from them could not fail eventually to become a great public blessing.

The terrene conditions which constitute the other "blade of the shears" are, the upturning of the original soil, together with the presence of all kinds of filth. So invariably has the soil of the country been disturbed and thrown up for various purposes before each epidemic that has been observed in numerous cited localities, that it is emphatically asserted, that "the emanations arising from the upturning and exposure of the original soil in the summer season, together with filth, under certain determinate atmospheric conditions, have been the main if not the special cause of every epidemic yellow fever that has ravaged not only this city but the south-western part of the United States for more than half a century." For a severe epidemic it requires a great disturbance of the original soil, for an endemic less, and for the periodic and bilious fevers still less, so that it seems these fevers are readily convertible the one into the other, according to the concentration of the causes and the susceptibility of the individual. It is not necessary to state what constitutes filth in a great

city, the evidences of its existence are too abundant. The many odors which greet us whenever we go abroad in our streets cause us instinctively to hesitate through fear that some lurking poison is therein contained to contaminate us, or to breed some pestilential epidemic. This existing anywhere, with the upturning of the soil, the draining of marshes, receding inundations, the presence of badly conducted cemeteries, of offensive slaughter-houses, etc., are enumerated among the localising conditions.

These conditions, it is asserted, can be remedied, although the meteorological causes are mostly beyond the influence of man, yet it is announced that the fever cannot arise without the coincidence of these two blades, the one being absent, no epidemic will be produced. It is then principally toward the terrene conditions that man is to direct his attention for the means of preventing yellow fever, as they are to a great extent under his control. The hygiene of cities should be regarded with more than ordinary care, for it is in cities that these localising conditions of pestilences accumulate, and upon their removal depend the health of the inhabitants. He is criminal who having the power to save neglects, through ignorance or design, the welfare of those whose health he is appointed to guard. The same remarks made in reference to yellow fever are applicable to all epidemic diseases, and no stronger proof is necessary of their value than the amelioration that has been wrought in the salubrity of certain localities by a studied and watchful care of their sanitary condition, all localising causes of disease being removed as far as it was practicable, and the terrene condition made amenable to the wisdom of man.

One more extract from this Report, and we shall have done with it. Dr. Barton thus sums up his views upon the subject of a *specific cause*: "The various hypotheses, based upon the supposition of a specific something, which is denominated Miasm, eliminated by the decomposition of organic matter, has been shown to be so utterly untenable by its several apponents respectively, of any *one thing* possessing this multifarious and mighty power that we have for many years abandoned the whole as untenable, and that of the 'drying power' among the rest, which having nothing definite in the form of reasonable experiment to support it, or rather in defiance of it, and in the very face of experiment which utterly disprove it, that I have long come to the conclusion that there is no such *specific cause*, but believe them to be all right and all wrong, when exclusive, and that

whatever impairs the purity of the atmosphere is *pro tanto* for the time being, the *miasm*, or rather the *mal-aria*."

The following deductions have been drawn from the careful observations of all these facts by Dr. Barton, and presented in the prefatory remarks :

" 1st. That the epidemic yellow fever has never occurred here (at its commencement) but during a high dew point, (the minimum being upwards of 74°.)

" 2d. That it has always ceased, as an epidemic, before it descended as low as 58°.

" 3d. That at the temperatures of the dew point below these, sporadic or endemic yellow fever may occur, but it is not known to have existed here with any certainty as an epidemic, when the dew point differed from that above stated.

" 4th. That what is miscalled the CONTAGION OF YELLOW FEVER, or its liability to spread, exists only with the first condition.

" 5th. That the main controlling influence in all unhealthy situations is MOISTURE, whether in cities, towns, countries, ships, or dwellings, although filth is deemed correlative.

" 6th. That MALARIA is not any one specific thing, but that all impurities of the air, and organic matter in decomposition, are liable to influence injuriously the organism, and particularly the worn out excreta of human beings may be so denominated, and are particularly incompatible with healthy action, and when in combination with the meteorological condition may produce fever."

We have endeavored to make a faithful analysis of this Report, and have tried to give in as few words as possible the train of reasoning of the author. We have received much pleasure from the reading of the paper, and while we are constrained to add our convictions to most of the arguments advanced therein, we cannot say that we dissent from any. If greater care had been taken in the syntactical arrangement, which in many places is so faulty, that the meaning of the author is thereby rendered very vague, the value of the work would have been greatly enhanced, if not in a strictly scientific point of view, certainly in its literary character.

J. H. D.

Drake's Systematic Treatise, Historical, Etiological, and Practical, on the Principal Diseases of the Interior Valley of North America. Second series. Edited by S. HANBURY SMITH, M. D., and F. G. SMITH, M. D. Philadelphia : Lippincott, Grambo & Co., Publishers.

This work, now complete in two series, is intended to embrace the topography of this great valley, and its principal diseases. It covers a large field, and its voluminousness is remarkable, when the amount of labor required even to write such a book is considered. If the author were entitled to credit for nothing else, his industry must excite admiration.

It is well known that this distinguished professor was possessed of a most indomitable energy, and a mind well calculated to grapple with difficulties and to overcome them ; indeed, he rather courted opposition, which seemed to nerve him to greater exertion. Such traits of character well fitted him for the great task he assumed.

Circumstances were likewise propitious to his undertaking. Besides a residence of nearly half a century, as a practitioner, in this valley, he travelled extensively in search of facts, and studied with characteristic zeal the modifications of disease under the various influences of climate and locality.

The first series of this work was published in Cincinnati in 1850, previous to the death of the author. The profession are familiar with its contents, the most valuable being, we conceive, the topographical and climatic etiology. This comprises seven hundred pages of the volume, and its value entitles it to the space. In it we have the geography, topography, and the features of the whole interior Valley of the United States, Mexico, &c., and also a part of British America, with the climatic changes and meteorology of this vast extent of territory.

His description of the habits, modes of living, and characteristics of the inhabitants, add much to its interest. It is an embodiment of facts and scientific observations, valuable not only to the medical observer, but to the scientific man and others out of the profession. For the use of the general reader it would be well to separate this part, making [one volume of it, and putting the remainder in one or more volumes. Science would be aided by it, and it would save much labor to the compiler who wishes to collect facts of this nature. We observe that all which follows this part in the first series, is

republished in the second, perhaps with this division in view on the publication of another edition.

The second series begins with autumnal fever ; and with regard to Dr. Drake's views on the causes of this *disease* we cannot forbear saying some things.

He lays down three influences as necessary to the production of the efficient cause of the fever. These are heat, moisture, and the decomposition of animal and vegetable matter. In this we agree with him, but cannot sustain his belief as to the nature of that cause thus produced. We acknowledge that heat and moisture alone are not sufficient to produce the disease, his argument on this point being conclusive. Not so, however, that in favor of the animalcular theory.

He says, "On the whole, therefore, I must repeat that the conditions under which our autumnal fever appears are sufficiently clear to observation ; the existence of a special gaseous agent resulting from them remains to be proved." We think just so about his animalcular theory. His arguments are mainly based upon analogy between the visible and invisible animal world as to poison and these may be true. But those used to establish the condition necessary for the production and diffusion of the animalculæ, and their absorption into the system, will apply as well in most of them to the conditions necessary for the production, &c., of the malarial or gaseous poison ; and, that it may be that the gas or gases are produced, he admits as follows : "But it can be said that, in the endless variety of new compounds which Nature may form out of the ultimate elements of plants and animals, there may be many which have not yet been detected, and that some one of these is the efficient cause of the fever, and this cannot be denied." And he gives the following "five facts" in support of this theory, which facts cannot well be set aside in their bearings upon this point.

He says : "The facts which have been cited teach us that there is, mingled with the soil or resting upon it, a great amount and endless variety of organic matter, both animal and vegetable, to the decomposition of which, and to the resulting new compounds the malarialists look for the efficient cause of autumnal fever. In doing this, special stress may, with great propriety, be laid on a few unquestionable facts :"

"1. That, all other circumstances being equal, the fever prevails most where the organic matter is most abundant, in or resting on the soil.

"2. That, where the surface is not moist enough to favor the decomposition of organic matter, the fever has but little prevalence.

"3. That a temperature of sixty degrees Fahrenheit, or above, is necessary to fermentation and putrefaction, and that the fever ceases in going North, where we reach a summer temperature below that degree.

"4. That particular localities have experienced the fever, in an epidemic form, where a surface abounding in organic matter has been newly exposed to the action of the summer sun.

"5. That under long cultivation, which exhausts the organic matter of the soil, and prevents its accumulation on the surface, the fever almost ceases to appear."

But he uses these facts in a different way, to establish the animalcular theory, and he makes a most plausible one of it, to a superficial reader, but, we think, does not use them as well as he could, to establish the malarial hypothesis.

We wish to show what we consider to be a contradiction. In his twelfth section, under the head of the vegeto-animalcular theory, he says, "It is well known that the long-continued cultivation of the soil, and the building of towns and cities, diminishes the prevalence of the fever. Now this cultivation implies the drying up of a great deal of surface water, the burning up of the natural vegetation, and the gradual decomposition of that which has been mingled with the soil. Summer crops, as those of wheat and hay, are also removed, and not suffered, like the natural herbage, to accumulate on the surface; and those of Autumn are either removed, or in the Winter consumed, to prepare the fields for new planting. Thus the food of microscopic beings is destroyed, and their reproduction arrested." Compare with this, section seven, under the malarial hypothesis. "It is well known that a family may settle down in the forest, and cultivating but a small spot, remain free from fever; but when several families arrive, and an extensive breaking up of the soil takes place, it immediately begins to prevail, although the heat and moisture are not thereby increased." In the former it will be seen that he says that cultivation removes the food for animalculæ, and in the latter that cultivation produces the efficient cause, which he says is animalculæ. If in one case the food is destroyed, it must of necessity be in the other, at least to some extent; and if the fever was not present at first, how could it appear after the conditions which produce its cause were removed.

But we refer the reader to the result of the labors and researches of many of the greatest men in Europe on this subject, which go to refute and explode this theory of animalcular causes of disease.

The work, as a whole, is in many respects a very valuable one. We object to its voluminousness as not proper in a work of this kind. The book would have been more generally read, and more useful as a book of reference, had its author condensed what he had to say of the various diseases into a smaller space ; for a systematic treatise on each disease spoken of would not be expected in a work of this character.

It is to be regretted that the life of the lamented author had not been spared to complete his work, for doubtless he would have condensed and re-arranged the abundance of material into a smaller compass.

D.

PART III. — PROCEEDINGS OF SOCIETIES.

NEW YORK PATHOLOGICAL SOCIETY.

October 10. *Dr. Markoe* exhibited a specimen of *fracture of the cervix femoris*, taken from a girl nine years of age, brought into the New York Hospital, with injuries received in a fall from a sixth story window. Attention was specially directed to the left hip. The limb was shortened half an inch, knee slightly flexed, and the toe inclined to remain erected. On rotation, the trochanter moves on a very short radius ; and on drawing down the limb and making rotation, crepitus was abundant and distinct. The point of the trochanter followed the movements of the shaft, showing it not to be detached. Taken in connection with the manner of the accident, and the age of the patient, these symptoms seemed to indicate an extra-capsular fracture of the neck of the femur. It became a matter of some interest to ascertain whether this case would throw any light upon the pathological law, most clearly elucidated by Robert William Smith of Dublin, that, in extra-capsular fracture of the cervix femoris, there is always a wedge action of the upper upon the lower fragment, whereby the trochanter is split more or less completely into several fragments. She died the next day from the injuries sustained.

Post-mortem.—On inspection, a fracture is observed, just external to the capsule, separating the neck from the femur. The specimen also shows clearly another fracture, separating the point of the trochanter from the shaft ; a separation which, when we look sidewise

at the specimen, is evidently produced by the wedge-action alluded to. This, however, was not at first so readily seen, because the aponeurotic covering of the bone was not entirely lacerated, thus keeping the fragment, in connection with the shaft, and preventing this second fracture from being discovered before death. It is particularly interesting to discover that this separation has taken place at the line of junction of the epiphysis, the upper fragment being, in fact, the epiphysis, only partly ossified. It is the youngest case of fracture of cervix femoris that he has ever observed.

Dr. Willard Parker presented a specimen of *hypertrophy* of the *breast*, removed from a woman forty-eight years of age, of good constitution, and the mother of three children. Ten years since the tumor was first observed; it slowly increased, without pain or any uneasiness. In five years it attained the size of the fist, and remained so until February, when it commenced rapidly increasing, being however still free from pain, and only inconvenient from its size and weight. He did not regard it as malignant, but advised its removal, fearing it might possibly become cancerous. The lymphatic glands in its vicinity were not enlarged. The tumor weighed four pounds. On examination by the microscope, by *Dr. J. C. Dalton*, no evidence of cancer was observed. It was principally composed of the milk tubes in a compressed state, but little fibrinous tissue, and abundant amorphous, granular matter. *Dr. Parker* remarked it was an uncommon form of disease; it was named *lobulated hypertrophy* of the gland by *Beckett*, and *chronic inflammation* of the *breast* by *Cooper*. The present is the third case which has come under his observation, and all had been successfully removed.

Dr. A. Clark observed, that the subject of a change in character from a benign to a malignant tumor had before received the consideration of the Society, but no facts had been presented satisfactory to his mind, and he would make the inquiry of the surgeons here to-night, whether any of them were familiar with an instance in which a non-malignant tumor assumed a malignant character by change of structure.

Dr. Metcalfe remarked that instances are recorded by *Syme* of the so-called recurrent fibroid tumors, which have been removed, when benign, and in the place of removal, after several operations, the returned growth was unequivocally malignant, became ulcerated and fungoid.

Dr. Clark said the fibroid character of tumors was too unsettled to pronounce on their precise nature. He was in doubt if degenera-

tion ever occurs, or in other words, fibrinous deposits become cancerous.

Dr. Parker, in reply, instanced three cases with which he was familiar. One of them, at the time he was consulted, nineteen years ago, presented points of similarity, in its history and progress, to the tumor now before the Society. He advised the patient not to interfere with the tumor. Seven years after he removed it, and it was then pronounced undoubtedly cancerous in character.

The discussion was continued some time longer, the opinions of members being generally favorable to the idea of degeneration of fibrous into cancerous deposits.

Dr. J. C. Dalton presented a specimen of *intestinal calculus*, obtained from a patient who died of chronic dysentery. For two years he was, at times, subject to pain over the region of the liver. Extensive ulceration of the large intestines existed. No alteration of the mucous membrane of the small intestines was observed, until about five feet from the ileo-cæcal valve, where there was a dilatation. In this pouch were four calculi ; there was no other contraction, and no inflammation. They present a smooth surface, resembling cholesterolin, but on being tested, did not act like that substance.

PART IV.—CHRONICLE OF MEDICAL PROGRESS.

The Lake Superior Region Favorable to Health and Longevity. By
W. B. HERRICK, M. D.

IN order to arrive at correct conclusions upon the influence of the climate of any region upon health, it is all important that certain Meteorological phenomena, such as the temperature and barometrical changes, the humidity, density, purity, and other conditions of the atmosphere be closely and accurately observed ; and, that the separate and combined influences in modifying vital action, both in health and disease be thoroughly investigated and determined.

A comparison of the following observations made at Fort Wilkins, Keweenaw Point, on Lake Superior, and at Fort Snelling, on the Mississippi, shows, most conclusively, how great are the modifying

influences of the large bodies of water in the region of Lake Superior, in tempering its climate :

	Latitude.	Mean Temperature.	Winter.	Summer.
Fort Wilkins,	47°30'	41°46'	24°83'	58°61'
Fort Snelling,	44°53'	44°8'	16°3'	71°06'
Extremes at Fort Wilkins,			9°—	93°
“ “ Snelling,			23°—	115°

By the above table it will be seen that at Fort Wilkins on Lake Superior, nearly three degrees north of Fort Snelling on the Mississippi, the mean temperature is nearly the same, but that it is 8°53' colder in winter and 13°9' warmer in summer on the banks of the Mississippi than on the borders of Lake Superior, and that at Fort Wilkins the thermometer did not at any one time fall lower in winter than 9° below, or rise higher in summer than 93° above ; yet at Fort Snelling, it ranged from 23° below in winter, and 115° above zero in summer.

This remarkable difference in the range of the thermometer at two points, nearly in the same latitude, and about the same distance from the coast to the Atlantic, is produced by several causes, the most important of which is, doubtless, that resulting from the fact that but few, if any, bodies of water exist to modify the temperature of the atmosphere of the vast prairies bordering upon and extending hundreds of miles in every direction from the Mississippi, whilst on the contrary, numerous and vast bodies of fresh water abound everywhere in, and surround in every direction the Lake Superior region, cooling the atmosphere by contact, and the absorption of heat by evaporation in summer, and warming it in winter by the liberation of latent heat, during the congelation of vapor and water to form vast bodies of snow and ice. Another reason, not referred to before by writers so far as we know, modifying the temperature of this region, results, doubtless, from the fact, that in the line extending from Lake Superior to the Pacific, nearly in the course of Stevens' Survey, there are but slight if any mountain barriers to obstruct the free passage of atmospheric currents from the equable and congenial climate of Washington Territory.

Barometric changes as well as those of temperature, influence doubtless the vital functions of animals, to such an extent at least, as to require to be taken into consideration in all investigations regarding the influence of climate upon health. We are not able at this time to avail ourselves of statistics, if any exist, by which to show variations in the pressure of the atmosphere in this region ;

yet there are certain curious phenomena presented in the sudden rise and fall of water in our lakes, and especially in Lake Superior, which to my mind can be most rationally explained, by supposing that they are the result of varying amounts of atmospheric pressure, acting upon their surfaces at varied times and in different localities.

Concerning these remarkable phenomena, Messrs. Foster and Whitney, in their geological report, published in 1850, make the following remarks :

“Lake Superior possesses all of the sublimity of the ocean. In gazing on its surface, whether stretched out like a vast mirror, reflecting the varying tints of the sky, or ruffled by gently curling waves, or lashed by the fury of the storm, the beholder is alike impressed with a feeling of the grand and the infinite. During a residence of several summers on its borders, our attention has been directed to the fluctuations in the level of its waters ; and, while we have failed to detect any ebb and flow corresponding with the tidal action, we have, on the other hand, noticed certain extraordinary swells which appear to be independent of the action of the sun and moon.

“These risings attracted the attention of the earliest voyagers and they have not failed to record their observations with a minuteness worthy of commendation.

“In the Relation for 1670–71, Dablon uses the following language : ‘As to the tides, it is difficult to lay down any correct rule. At one time we have found the motion of the waters to be regular, and at others extremely fluctuating. We have noticed, however, that at full moon and new moon the tides change once a day for eight or ten days, while, during the remaining time, there is hardly any change perceptible. Three things are remarkable : first, that the currents set almost constantly in one direction, viz. : towards lake Michigan, which does not prevent their ordinary rise and fall ; second, that they almost invariably set *against* the wind—sometimes with as much force as the tides at Quebec—and we have seen ice moving *against* the wind as fast as boats under full sail ; third, that among these currents we have discovered the emission of a quantity of water which seems to spring up from the bottom ! ’ ”

Dablon, the writer last quoted, attempts to account in part for these changes by assuming that there are underground passages leading from Lake Superior to the lower lakes. Such a supposition, which for various reasons the writer considers untenable, would favor the theory that these changes are produced in whole, or in part, by varying weight of the atmosphere at different times and localities.

The following quotation from the work referred to above, is, as it seems to the writer, nearly conclusive in the support of this view :

“Professor Mather, who observed the barometer at Copper

Harbor during the prevalence of one of these fluctuations, has published the results of his observations. He remarks : 'As a general thing, fluctuations in the barometer accompanied the fluctuations in the level of the water ; but sometimes the water level varied rapidly in the harbor, while no such variations occurred in the barometer at the place of observation. The variations in the level of the water may be caused by varied barometric pressure of the air on the water, either at the place of observation or at some distant points. A local increased pressure of the atmosphere at the place of observation would lower the water level where there is a wide expanse of water, or a diminished pressure under the same circumstances would cause the water to rise above its usual level.'

Admitting the correctness of this view, and it would require but a few observations made with the proper instruments on the shores of this or any other lake to test its truth or fallacy, and we have the reciprocal action of the water below upon the atmosphere above, acting in such a manner as to modify the pressure of the atmosphere, making it greater or less according as the water is higher or lower ; thus making the action of the lakes in this region important agents to modify barometric pressure as well as temperature ; and additional contributors to health and longevity, by preventing, measurably, those excessive barometric changes so detrimental to life and health.

The hydrometric condition of the atmosphere of this Lake Superior region, is, so far as we know, a subject still waiting for and requiring investigation, hence we will state briefly what are some of its geographical and geological features, which must, in conformity with well known natural laws, have the greatest influence in modifying the hydrometric condition of the atmosphere. The numerous bodies of water which surround Lake Superior in every direction, added to its own broad expanse, present an evaporating surface to the sun and air, such as must facilitate to a remarkable degree the accumulation of watery vapor in the atmosphere of this region, yet there are good reasons for believing, as seems to be the general impression of the inhabitants here, that extremes of humidity as well as dryness, seldom, if ever, occur. Among the most important modifying influences affecting atmospheric humidity is, doubtless, the character of the country bordering upon the coast. Upon this subject Prof. Agassiz remarks as follows :

"The general shape of Lake Superior is that of a crescent. But it would be a great mistake to suppose it bounded by curved lines. Its shores are combinations of successive sets of straight parallel lines, determined in each instance by a peculiar system of trap-dykes.

These dykes have five general directions, and the outlines of the shores are determined by their combinations."

The mountains and highlands of this region are not elevated to a height sufficient to lower to any great extent the temperature of the atmosphere passing over them, yet their broken and irregular outlines as well as the angularity of their junction one with another constitute numerous projecting barriers imperfectly separated by corresponding depressions, by which all atmospheric currents are broken up and changed in their direction to such an extent that the unfortunate coaster frequently finds himself suddenly checked in his onward course, and his sail flapping between two atmospheric currents, coming from opposite points of the compass, or what is less common, perhaps he finds himself suddenly drenched by rain or enveloped in fog resulting from the sudden condensation of watery vapor, previously suspended in one or the other of two atmospheric currents, uncongenial both in humidity and temperature, which have suddenly and unexpectedly met in their passage to and from different elevations of old Superior's castle-walled and terraced coast. In view of the facts here presented, it is evident that in an atmosphere in which the currents are so varied and unlike in direction, temperature and humidity, no great excess of watery vapor can be accumulated or remain suspended for any length of time, without being affected by one or the other of these numerous condensing causes.

Another influence which is very efficient, doubtless, as a preventive to the excessive accumulation of watery vapor in the atmosphere of this region, is the remarkably low temperature of the water of the lake. An accurate and careful experimenter states that he found the temperature of the water of Lake Superior, during the summer, a fathom or two below the surface, but a few degrees above the freezing point.

This low temperature of the water has an important influence upon the atmosphere both in directing its current and modifying its humidity. A well known atmospheric phenomena of this region, is the land breeze, caused doubtless by difference of temperature in the atmosphere over the water and upon the surrounding highlands, by which an almost constantly recurring nightly current is produced of the more dense air of the mountains, towards that which is comparatively rare covering the lake.

With regard to the purity of the Lake Superior atmosphere, it may be stated in brief, that the sources from which the deleterious

gases of regions less favored in this respect, originate, do not exist in this region.

Its geological formations being as they are for the most part primitive ; and the comparatively low temperature of the atmosphere, are circumstances which preclude the possibility of a generation of gases from decomposing organic or other matter sufficient to change it in any perceptible degree from its normal constitution.

Its purity is also manifest in its invigorating effects upon man and other animals ; as also in its remarkable transparency, manifested in the extent of the field of vision, and the softened translucence of a Lake Superior sky.

The above facts being such only, as a recently inhabited country affords, are necessarily few in number, and imperfectly classified, yet the writer believes they are sufficient to justify the following conclusions, in regard to the temperature, humidity, and purity of the atmosphere of this country. First, as regards temperature, it is evident that the average amount of cold during the year, and the extremes of heat in summer, and of cold in winter, are less, than in any other region in this country, east of the Rocky Mountains ; in the same latitude either east or west.

Secondly, the facts and circumstances which have been mentioned, as having the most influence in determining the amount of pressure exerted by the atmosphere at different times and places, are such as to indicate that barometric changes are never excessive.

Thirdly, it is evident that the vast bodies of water in this region, furnish such a widely extended evaporating surface, as to favor a suspension, in the atmosphere of an excess of watery vapor ; yet the causes which have a tendency to produce condensation, are so varied and numerous as to effectually prevent frequent or long continued excessive humidity.

In conclusion, we will simply state, that it must be apparent to all, that no causes favorable to the production of impurities in the atmosphere of this region exist, therefore no argument is required upon this point.

The inevitable conclusions to be drawn from the facts and reasons thus briefly and hastily adduced, are that the region of Lake Superior is one highly favorable to the preservation of health and long continuance of life ; being as it is, well adapted, both geographically and geologically to the preservation if not to the generation of animals ; and having as it has, a pure atmosphere, in which the thermometrical, barometrical, and hydrometrical changes are never excessive.—*N. W. Med. Journal.*

Paregoric Powder. By JOHN P. LITTLE, M.D., of Richmond City.

I have used for some time past a preparation of paregoric in the state of powder, instead of always using it as a liquid. It is nothing more than the solid ingredients, which are used in making the camphorated tincture of opium, reduced to a very fine powder, and mixed intimately with prepared chalk and sugar.

Sometimes I have rubbed up oil of anise with the chalk, thus making the powder more closely to resemble the liquid paregoric. More commonly, however, I have added a drachm of powdered cinnamon instead.

This is the prescription as commonly prepared : R Pulv. opii, ʒi ; pulv. cinnamon, ʒi ; acid benz. ʒi ; gum camphor, ʒij ; sac. alb. ʒij ; cretæ prep. ʒlv and ʒi. M. Fit. Pulv.

There will be one grain of opium in every drachm of the above powder—that is to say, one drachm of this preparation will be equal in anodyne properties to about half an ounce of paregoric, and one grain of the powder will represent four minims of the liquid. By bearing in mind, then, this proportion of *one to four*, the practitioner can easily proportion his dose to the character of the disease and the peculiarities of the patient.

This powder easily mixes with water, and owing to the quantity of sugar it contains, is readily taken by the child.

I question whether it would not be well to increase the quantity of benzoic acid in the above preparation. It acts upon the mucous membrane of the stomach and lungs, and has a very happy effect on the kidneys and urinary secretion.

This powder may be employed in all cases requiring the use of a mild anodyne, or wherever paregoric is commonly prescribed ; and especially in those cases, frequently met with among children, where the stimulating properties of the alcohol render the use of the tincture of doubtful advantage.

The chalk is beneficial by its antacid property ; and as will be at once seen, the compound of opium with chalk and an aromatic, forms a valuable medicine for the treatment of infantile diarrhœa.

It is in this class of cases especially that I have made use of it, combining it with calomel, or adding a larger proportion of chalk. I have found it one of the most efficient remedies ever used by me in the treatment of those troublesome diseases called summer complaints.

I prefer the use of it in place of the paregoric tincture, where it is

necessary to soothe a child to slumber, who is suffering in cutting teeth, although it is necessary here to guard against any tendency to constipation, by adding rhubarb to the powder, or administering small doses of castor oil.

Indeed it may be added to many of the medicines which we are accustomed to give to young children, being used for instance as a carminative to render more easy the action of a purgative.

I have used it also for adults, in diarrhœa, &c., or wherever an anodyne antacid and carminative were required.

An objection to the use of liquid paregoric, that its strength may be increased to a very dangerous degree by the evaporation of the alcohol with which it is made, cannot of course lie against this preparation.

And if it be urged that paregoric, in powder, cannot be so conveniently given as paregoric in liquid, (the one having to be weighed and the other being merely dropped), it might be answered, that parents and nurses are too much in the habit of dosing young infants with this dangerous liquid, and that it is far better for the administration of opiates to remain in the hands of those who are qualified to use them.

Paregoric, Godfrey's cordial, and all this class of anodynes, have slain more children than the wars of hostile nations have destroyed of men.

In preparing this powder, it is scarcely necessary to state, that great care should be taken to see that the ingredients be finely powdered and thoroughly mixed.—*Stethoscope*.

Brompton County Court.—Calling in a Second Medical Man.—Important Decision. CLARK v. MARTIN.

The plaintiff, a surgeon of Notting-hill, in this action, sought to recover the sum of £2 2s. of the defendant, who keeps a beer-house in the same neighborhood. The circumstances are of more than ordinary interest to the profession and the public. Mr. Bradley appeared for the defendant.

The plaintiff stated that the defendant's wife engaged him to attend her in her confinement; that upon examining her, he discovered that there would be some danger and difficulty in her accouchement, and

upon been called in he found the birth was a foot-presentation, and as manual exertions on his part were necessary to assist the labor, he commenced operations. The patient was, however, so strong and violent that several women and himself were unable to hold her, and in her struggles she kicked his arm, and detached some portion of the child. He apprized the defendant and his wife that it was positively necessary some eminent accoucheur should be called in to assist ; and witness sent his servant for Dr. Murphy, who came, and as defendant refused to pay that gentleman, witness had paid him £1 1s. for his services. He now claimed £1 1s. for his own services, and the £1 1s. he paid to Dr. Murphy.

Mr. Bradley said the plaintiff had acted unskilfully and negligently ; and if he proved these allegations the plaintiff was not entitled to recover. With regard to the £1 1s. charged for Dr. Murphy's assistance, it was clear that medical men had no more right to call in assistance than a lawyer have when in a difficult case, unless they do so at their own cost. If medical men were allowed to call in whom they pleased, and to charge their patients for such extra advice or assistance, there would be no foreseeing how many doctors would be at an accouchment. Mr. Bradley called—

Mrs. Martin, who said her charge of negligence was, that when Mr. Clark was sent for he did not come for a long time ; and after he had performed the operation, he left the head of the child, which had become detached, to come by itself, and left her all night in this state. She considered it was his unskilfulness that made him wish for further assistance ; and when he said he must call in some one else, she distinctly told him that if he did so she could not pay for it.

Mr. Clark said that had he remained with his patient all night, his services or presence would have been uncalled for. From the state the patient was in, it was advisable to let Nature have its course ; and after giving Mrs. Martin a composing draught, he left her to attend another patient, who had a like difficult labor. He had had a most extensive practice in such cases, and there was not a shadow of pretence to say that the child could have been saved, or that he had acted unskilfully or negligently.

The learned Judge (J. L. Adolphus, Esq.), said that grave charges had been made without being established. He considered the plaintiff had done his best, and what was proper, and was sorry he could not allow him the £1 1s. he had paid to Dr. Murphy. Verdict for £1 1s. and costs.—*Dub. Med. Press.*

Researches upon the Effects of Cauterization of the Chest in Asphyxia and other kinds of apparent Accidental Death. By Dr. FOUERE. (Translated by Dr. THOMASSIN for the MONTHLY.)

Many methods have been employed for asphyxia, which results from the introduction into the chest of irrespirable gases, or from a mechanical stoppage of the respiration. These means, borrowed from the most contradictory ideas, have been variously appreciated and their absolute or comparative value is far from being fixed.

However, the cases of asphyxia are among those which demand a sure and rapid decision. Some minutes will be often sufficient to decide on life or death, and irresolute groping may, by losing time, let a last chance of safety escape.

I thought it would be a profitable work, to submit to the control of experiment the methods used, to appreciate their degree of usefulness, and to establish between them a subordination founded upon facts. It is the result of these experiments that I have the honor of presenting to the Academy.

First, I must say that I have laid aside all the methods which require considerable apparatus, and which are of difficult maintenance ; all those for which the hand of an experienced operator is indispensable ; and, lastly, all those which, under a supposed theoretical advantage, offer positive danger.

It seemed to me that the first condition that a method fit to be used in asphyxia ought to fulfil was to be simple enough for the material elements of its execution to be met with everywhere, and of such harmlessness that it might be committed to unskilful attendants without apprehension. The number of subjects of experiment is thus singularly reduced.

The animals that I have asphyxiated were shut up in a little room, arranged in such a way as to render observation of each movement easy, and they were, as much as possible, in conditions identical with those in which individuals are who perish by the vapor of charcoal. I have followed the asphyxia gradually from the first uneasiness to death. By removing the animals experimented upon from the influence of the asphyxiating atmosphere into the open air, at different periods, I had the measure of the curability in degrees more or less advanced. By applying to each of these periods customary succor, I had the measure of their relative efficacy, and, at the same time of their action compared to the simple efforts of nature.

These first experiments have led me to rather unsatisfactory con-

clusions ; they have confirmed me in the often stated opinion, that the means proper to re-establish heat, and to exercise upon the nervous system a quick re-action, succeed in the incomplete asphyxia, on the condition of being continued with great perseverance ; they have shown me, in the most positive manner, that these means are almost always impotent when the asphyxia is carried far enough to render death imminent.

About this time a case of the most serious asphyxia was presented to my observation. After having used, without result, the proceedings which experience had proved to me inefficacious, I had recourse to a method of cauterization not yet practised, and which had the effect of recalling the patient to life. Here is the case.

On the 4th of February, 1855, a young girl had asphyxiated herself voluntarily. I found her inanimate, pale, insensible ; her respiration was hardly perceptible, the throbbings of the heart very weak and heard only at rare intervals ; a total absence of pulsation in the whole body.

Bleeding, cold affusions, the titillation of the nostrils with a pen, the irritation of the respiratory passages by sulphurous vapor, sinapisms, flagellation, artificial respiration, all were useless. I applied nearly red-hot handirons upon the inferior limbs. Profound sloughs were produced, but the patient did not move. Two hours had elapsed, having exhausted, without any success, all the proceedings ordinarily used. Losing nearly all hope, I cauterized the upper part of the chest with the point of the iron. I then successively touched the lower part of the clavicle, the armpits, and the intercostal space. She remained at first immovable, but after two minutes, the fingers were stretched, the hands, hitherto applied against the body, opened ; soon they were brought forward, and agitated as if to repulse something. Slight as was this success, it seemed to me significant. Believing her saved, I stopped the cauterizations. Some moments after she had fallen off into the same state as before. I began again. The result was still more striking. She made a movement, opened her eyes, raised her head, and uttered a low cry ; however, having again stopped, I saw her again sunk in a state quite as serious as that from which I had just aroused her. I had recourse a third time to the red-hot iron, and continued to cauterize her in spite of her resistance, which I had the happiness of seeing soon become energetic. When I was assured that the sensibility was awakened definitively, although still persisting in the cauterization, I flagellated her with a whip with several lashes. It was seven o'clock in the

evening, and, exhausted by fatigue, I was forced to stop ; but M. Dourlans, the Commissary of Police, who had been a witness to these manœuvres, understanding of what importance it was for the salvation of this woman not to interrupt her treatment for an instant, ordered a sergeant of police to remain near her, and with instructions to act as he had seen me several times, if she slumbered. In the night I was recalled to her ; and it was only thirty-eight hours after the accident that she had entirely recovered, having no recollection of the burns or blows.

Encouraged by such notable success, I resumed new experiments, in order to ascertain if the results obtained were owing to accidental conditions, or if the means that I had employed were of a nature to constitute a mode applicable to all serious cases. These experiments have led me to the most conclusive fact. They allow me above all to establish the following propositions :

Firstly—After asphyxia the cauterization of the thorax constantly provokes respiration, so long as a shadow of breath remains. I have seen it recall life in serious cases of apparent death. I have never succeeded, it is true, in animals whose heart had entirely ceased to beat, but I have reanimated some in which the movements of this organ had fallen relatively to the normal state in the proportion of 3 to 7, a state which, when it coincides with an extreme weakness, is that nearest to death.

Secondly—That the sensibility dies away from the extremities of the body to the centre, it returns, on the contrary, from the central parts to the extremities very often ; and, as it has been seen in the preceding experiments, the red-hot iron may remain during an unlimited time upon the inferior parts without giving rise to the least sign of sensibility, whilst its application for some seconds upon the upper region of the thorax suffice to soon provoke energetic movements. In the case of Miss G., this peculiarity was the more remarkable, as after four or five applications of the iron the movements of the thorax were displayed, and it was only when they had acquired some amplitude that the arms and legs became sensible. We cannot insist too much upon the importance of this fact, for it demonstrates all the inutility of the efforts directed towards the inferior extremities in the case of asphyxia, and in all other kinds of apparent accidental death, and, above all, the advantage that would be found, on the contrary, in acting directly upon the only excitable region remaining.

Thirdly—The aptitude to feel the pain is void as long as the subject remains exposed to the cause compromising his life.

Fourthly—Asphyxia has a great tendency to re-appear, even when it seems to be entirely dissipated; often death surprises the individuals in the very moment they were thought to be out of danger.

In the history of asphyxia, similar cases are not wanting; consequently, in the serious cases, it is important to persist in the treatment, and to exercise the most attentive inspection upon the patients, even for a long time after their complete recovery. A dog has offered to me, on this occasion, a most remarkable example.

It is never a manifestation of pain which appears as the first symptom of cauterization of the chest, but a series of muscular movements, the consequence of which is, finally, the widening of the thorax. The signs of pain are evident only when the respiration and circulation are re-established, at least to a certain point. It seems, in short, that in these circumstances the organism requires a determined quantity of exertion in order to be roused from its state of torpor.

We can never affirm that an individual would have died in a given circumstance, if heat or such remedies had not been applied to him; but without prejudging the absolute value of a treatment, we can always, by reason of the immediate effects, admit that it will be more or less powerful in such and such conditions.

After having recognized in so positive a manner the efficacy of the cauterization in asphyxia, I have asked myself if its use could not be extended to all the cases where death is caused by an accidental lesion of the respiratory functions, such as strangulation, hanging smothering under a fall of earth, in crowds, submersion, &c. Finally, I have studied their effects in some cases of poisonings, particularly those owing to strong doses of opium and chloroform. These experiments, which have left me no doubt, would lose, I believe, in being reported only in a summary and incomplete manner, but they will be published in another work. I will quote only one example.

I have stated the power of cauterization in case of apparent death by strangulation. I wished to know what was to be expected from it in those cases in which life is suddenly compromised by the fact of a violent and invincible compression of the chest, as it so often happens in the falling of walls or where individuals are crushed somehow under the fall of earth or in a crowd.

CASE.—I chose a very large bull-dog. I placed a beam upon each side of all the length of the trunk, and by two strong ropes provided with a tourniquet, I was able to carry the constriction to the highest degree. The animal, it may be presumed, defended itself at

first with energy ; it threw itself upon me, bounded into the air, and precipitated itself against the wall, and, in spite of his muzzle, uttered a low growl, during thirty minutes. Alternately it struggled with fury or remained dejected. At last it fell and rose no more. A great deal of blood dropped from the nostrils, its eyes remained quite open, and a slight movement of the chest indicated alone from time to time that a breath of existence remained. The anæsthesy was complete, and permitted me to leave a red hot iron upon different parts of the body, and even, when I applied this instrument upon the chest, more than a minute passed before a sign of sensibility appeared ; then some vague contractions were seen, they became stronger in proportion as I persisted. Soon the ribs were displaced, the thoracic parietes moved, and all the respiration emerged slowly from the profound annihilation into which it had fallen.

In none of the experiments was I as much as in this last able to state the power of cauterization. The animal recovered only progressively, and with effort. Each time that I applied the red-hot iron upon its chest, the respiration was accelerated. Often even it moaned, but remained immovable. Evidently the dog had the sensation but not the feeling of the pain. At last it made some efforts to escape the pain, and recovered so well, that on the following night it snapped the rope, and, breaking a pane of glass, escaped through the window.

We must say, nothing gives a better idea of the confusion of this state than the bearing of the animal cauterized ; it struggles, is agitated, it screams, and often it throws itself upon the red-hot iron, sometimes seizes it with its teeth, and bites it fiercely.

The succession of the observed phenomena gives a good account of the mode of action of the cauterizations. In applying on the limbs the most energetic actual cautery, the slightest reaction is not determined, in applying it to the chest, the life is reanimated, all the power of the remedy depends, therefore, upon its localization finally, by an advantage which cannot be too much appreciated here.

Nothing is more simple than the execution of the treatment ; it does not require any medical knowledge, courage and perseverance suffice.

A bit of metal is heated thoroughly—its shape is immaterial ; it suffices that there be a thin edge and a smooth surface—a hand-iron, a shovel, a hammer, &c. In default even of these objects, lighted charcoal may be applied, as by M. Confreron.

The cauterizations are practised on the upper part of the chest,

under the arm-pits, upon the region of the four or five first ribs, and in the space which separates them, alternately on the right and on the left side. They succeed each other rapidly and without interval. In order to prove the sensibility, the edge or the point of the instrument is slightly applied in describing some lines of three or four centimetres in length, but, if necessary, increasing the power of the proceeding. We do not hesitate in proportion to the resistance experienced to press strongly, and with a broad surface. I have seen very often a deep cauterization obtain a result which had escaped hitherto, in spite of the reiterated but weaker application.

In a general manner the cauterizations must be multiplied rather than insisting too strongly upon each of them, but we must expect in serious cases to make many and strong cauterizations before obtaining the first manifestation.

When the person asphyxiated has given some signs of sensibility, his safety depends almost always upon the degree of perseverance that is used in the treatment. We must recollect that the morbid state, whatever it may be, has taken in the economy a right of fixed residence which it does never yield immediately, and which it is always ready to seize upon again, it can only be vanquished by one of those struggles which draw their strength more from the obstinacy of the treatment than from its rigor ; here a long and active patience prevails over an impetuous, and for this reason temporary energy. Thus, far from stopping after the first signs of sensibility, and whatever may be the cries of anguish, we must persist a long time irritating the patient by burns, and when the chest acts with amplitude they must be extended to all the parts of the body. Once assured of having awakened the sensibility of the limbs, we must have recourse to flagellation—it is of all the excitable means the most preferable, its power can be increased instantly or diminished at will, it leaves only transitory traces and does not cause any injury to the organism. Lastly, far from losing its energy by employment, it acquires more at every instant, for the blows striking the parts already bruised are still more painful. Some leather thongs, a cat-o'-nine-tails, cords, a handful of flexible birches, or fresh nettles are perfectly sufficient, all the surface of the body is stricken with repeated blows, and with the greatest possible strength, remembering that the more we provoke efforts and agitation so much the more assured the return to life. Knowing, lastly, how much it would be dangerous to be stopped by the most evident signs of recovery, we must, during the first hours oppose all tendency to sleep, for to let the patient indulge in this re-

pose would be exposing one's self perhaps to see him die suddenly.

These experiments, had they even no other utility, prove that the place of election, for which we are not accustomed to account, modifies singularly the mode of action of the caustics, even when they are not destined to guard against local lesion, and they open, consequently, a new way of investigation to therapeutic science.

Encouraged by this result of cauterizations, I asked myself if it would not be possible to turn to account the cauterization of the thorax, or rather this treatment of asphyxia, to some other cases of accidental death. The following experiments will answer better than all the assertions.

Case I.—A young dog was hung by the neck in a fixed knot passing behind the jaws and occiput, the cord turned upon itself. It remained a quarter of an hour in complete tranquility, which I confess I could not account for, particularly in recollecting the rapidity with which the symptoms of strangulation appear in such a case, the heart having suffered only a slight acceleration, it was suddenly convulsively agitated, it writhed every way, the inferior extremities approached the chest, it would take the cord and bite it with rage, the jaws gnashed each other, its mouth opened unusually wide, its tongue lolled out, the eyes projected, the conjunctiva, the buccal mucous membrane, and the tongue at the base above all had taken a violet tinge ; it made water twice very abundantly, the throbbings of the heart were so much disordered that it was impossible to follow them.

This crisis, after having lasted two minutes, suddenly ceased, the jaws moved only slightly, the throbbings became more and more distinct, at the nineteenth minute I counted only three or four for ten seconds ; the animal was set free, and placed upon my table ; it gave no signs of life ; the pulsations, imperceptable to the hand, were with difficulty perceived with the stethoscope ; the insensibility complete, the red hot iron was carried with impunity over all the body ; it was as near death as possible. I then applied the caustic under the armpits and upon the ribs. It recovered in a few minutes. This animal that I hung several times remained always from ten to twelve minutes without appearing much inconvenienced, I have afterwards placed it in a slip knot, it resisted much longer than most other animals.

Case II.—A moderate sized cat was tied by the paws, and after having opened its trachea, I fixed within the mouth an india-rubber tube. I could at will diminish or interrupt the column of air. The animal could support long enough a low and gradual diminution,

but when the cylinder was reduced to about half its surface, accidents supervened which aggravated rapidly; painful and precipitate respiration, tumultuous and short palpitations, agitations, etc.; if, on the contrary, the air was suddenly and wholly intercepted, the state of the heart and lungs remained the same during three or four seconds, then the palpitations became suddenly tumultuous, the respiratory noise ceased, and an immediate and dull sound alone was heard; then the animal became violently agitated, it writhed convulsively, beat the table with its body, the mouth, nostrils, and eyes, were excessively opened, it bit with rage every thing within its reach, made water, and at last, after eight or ten seconds of this terrible crisis, fell down insensible. In this state, the hot iron applied to the limbs repeatedly, was without result: on the contrary, it had scarcely been applied two or three times upon the side of the chest before the animal began to breathe, and soon recovered. I repeated this experiment two or three times and always with the same results.

But in neither of the above experiments have I been able to prove the powerful efficacy of cauterization so well as in the following.

A very large bull-dog was bound, entirely from the collar-bone to the pelvis, tightly between two strong planks, two ropes placed at the height of the chest and belly, and provided with a tourniquet, allowed the constriction to be carried to the highest possible degree. The animal struggled at first with the most violent energy, it threw itself on me, bounded into the air, threw itself against the wall, and emitted, notwithstanding the muzzle, a loud growl, but soon after became calm, and presented symptoms analogous to those of asphyxia by charcoal, only the chest being maintained forcibly immovable, the entire respiratory movements were in some sort longitudinal. The clavicles rise very high towards the throat, the abdominal viscera seem to draw back the pelvis, at times the animal is laying upon the side or on the belly, and struggles hard to breathe, sometimes rises suddenly, stands erect against the wall, jumps with rage, writhes convulsively, shakes its jaws, an abundant foam mixed with blood runs from the mouth, and at last falls to rise no more; the movements of the chest are at first panting and precipitate, the consequence of this last ceases, slacken almost suddenly, and are soon scarcely perceivable.

After four minutes of this state the animal is in a profound stupor, the deepest cauterizations upon the legs and upon the chest even produce no result. When I deliver him the dog remains inanimate, extended in a complete state of relaxation, the jaws half opened, the tongue hanging upon the ground, the eyes wide open, a slight move-

ment in the chest alone indicates a shadow of existence. In vain I shake him—he remains quite insensible. Then I begin to cauterize the legs, thighs, under the toes, the sensibility is absolutely null, the hot iron is repeatedly applied, I leave it on the same place for two or three seconds, it does not stir. I apply it then to the chest at first, it produces some vague contractions, they are accelerated in proportion as I persist. The ribs are displaced, the thoracic parietes move, and respiration emerges slowly and by degrees, from the prostration into which it had fallen ; soon the head rises, the eyes are fixed upon me. I apply the hot iron upon the chest, the respiration is accelerated, it sees me and still remains perfectly tranquil ; then at each cauterization it groans and barks without seeking to escape ; he feels the pain but has no conscience of it ; at last the sensation is manifestly revived ; he makes some efforts to escape ; four minutes after I could not touch him however slightly with the iron on the paws or thighs without his howling violently, finally he recovered so well that the next night he broke his cord and escaped through a window.

In this experiment, which presented great difficulties, because the animal I had purposely chosen was among the most robust, opposed me strongly, I sought to obtain a state as near as possible similar to that of individuals smothered under a fall of earth or in a crowd.

The results I have obtained from cauterizations indicate enough the advantage to be drawn from them, and how much preferable they are to all the ordinary means employed effectively. At the Beaujon Hospital, in 1844, all the individuals who were crushed in the Champs Elisée, at the July fête, were pale, inanimate, plunged in the most profound insensibility, when brought to the hospital ; some showed convulsive symptoms ; in fresh cases the ordinary revulsives could not be of much use. Profuse bleedings of the arms and jugular veins were made—it was adding another cause of insensibility and hypostheny to that already existing, and almost all those seriously attacked, on their entry, died ; in similar cases, in consequence of the imminent danger, instead of losing time in employing vain remedies, it would be assuredly more rational to have recourse immediately to a treatment which, acting in an inverse manner to the cause of the malady, tends at first to reëstablish the functions before abolished.

A Doctor's Life. By an M. D., of Alna, Mi.

The following are some of the sweets of a Doctor's life. If he visits a few of his customers when they are well, it is to get his dinner ; if he don't do so, it is because he cares more about the fleece than the flock. If he goes to church regularly, it is because he has nothing else to do ; if he don't go, it is because he has no respect for the Sabbath or religion. If he speaks to a poor person, he keeps bad company ; if he passes them by, he is better than other folks. If he has a good carriage, he is extravagant ; if he uses a poor one on the score of economy, he is deficient in necessary pride. If he makes parties, it is to soft-soap the people to get their money ; if he don't make them, he is afraid of a *cent* ! If his horse is fat, it is because he has nothing to do ; if he is lean, it is because he isn't taken care of. If he drives fast, it is to make people think somebody is very sick ; if he drives slow, he has no interest in the welfare of his patients. If he dresses neat, he is proud ; if he does not, he is wanting in self-respect. If he works on the land, he is fit for nothing but a farmer ; if he don't work, it is because he is too lazy to be anything. If he talks much, "we don't want a Doctor to tell everything he knows ;" if he don't talk, "*we like to see a Doctor social.*" If he says anything about politics, he had better let it alone ; if he don't say anything about it, "*we like to see a man show his colors.*" If he visits his patients every day, it is to run up a bill ; if he don't, it is unjustifiable negligence. If he says anything about religion, he is a hypocrite ; if he don't, he is an infidel. If he uses any of the popular remedies of the day, it is to cater to the whims and prejudices of the people to fill his pockets ; if he don't use them it is from professional selfishness. If he is in the habit of having counsel often, it is because he knows nothing ; if he objects to having it on the ground that he understands his own business, he is afraid of exposing his ignorance to his superiors. Is he gets pay for one-half his services, he has the reputation of being a *great manager*. Who wouldn't be an

M. D.?

—*Nashville Journal of Medicine.*

PART VI.—EDITORIAL AND MISCELLANEOUS.

ARE OUR PUBLIC SCHOOLS INJURING THE *Bodies* OF OUR CHILDREN.—There is not a more important interest in the State than the Common School. Occupying the exclusive attention of those who are to be the men and women of the next generation, for many hours of each day, its influence upon society can scarcely be overrated, and any error of physical training that by implication or by constitution it circulates becomes a serious wrong.

We have often queried whether there were not something decidedly wrong in the amount of time that the Common School demands of our children for study, and in the still greater amount that it spoils for recreation.

Our city schools require—and it amounts to about the same thing throughout the State—that the scholar shall be on hand from 9 o'clock to 12, and from 12½ to 3. Now 5½ hours would not be too much for any healthful child, if with the ringing of the dismissal bell there came a season of relaxation until nine of the next day. But when we meet our boy of ten years old returning from school, we find him always loaded down with books—geography, astronomy, physiology, and half a score of the sort beside—in several of which he assures us that he must get a lesson before morning. And upon further inquiry, we find that except exercises in arithmetic, reading, spelling, and writing, all his studying is to be done out of school hours! Of course, if he is bright, he soon learns how to make short work of his lessons, and by hurried or stolen reviews in school to “stuff” for recitation. But if he is dull, he has a harder lot. Coming home from school he is jaded and weary. He loathes the sight of a book. He longs to put his old “trowsers” on and kneel in the gutter or on the crossing to have one good game of marbles, or he agonizes for a game at ball, or “tag.” He wants to expand his lungs and stretch his legs, and shake himself unhampered by a nice coat and out of the sight of grumbling teachers or guardians.

The prudent parent may consent to this in the summer time, but in winter there is no larger margin for play between the last hour of school and the first of night than a supper of proper length should entirely occupy, and none like to have their children out rioting after dark. Then, with the coming dark, the lad must sit down to his books. Under the most favorable circumstances he shares a light with the other members of the family, and while they talk of new

dresses and gossip of the day's affairs, he must keep his attention on problems that he abominates, or strive perpetually to commit to memory dates, names, figures, in which he can have no mortal interest. He is three times as long about it as if he had learned the same lesson in school ; has acquired a habit of studying lazily, or rather has fallen into a habit of "mocking" over books and calling it study, besides finding his temper soured, and his spirits broken by the constant repetition of rebukes that really kind parents and sisters inflict upon him for listening to their conversation rather than attending to his business. But with the end of his labors it is bed-time, and with the end of breakfast it is school-time again. So whatever of recreation, whatever of physical training, whatever of development of muscle or exercise of body he gets, is stolen during the week or lumped together upon Saturday, when there is no school.

Our Board of Education and excellent corps of teachers could scarcely adopt a more ingenious device to secure a generation of puny people. They inject great quantities of elementary knowledge into the mind, and surfeit it where they should feed it with the greatest care. The body is ignored—its organs recognized only as things to be mortified. They struggle vigorously to crowd boys into the Free Academy, but take very feeble measures to prepare them to face the world and take part in its stern conflicts. Our own impression is—perhaps it may be a crude and undigested one—that the five and a half or six hours a day are an ample time to detain young children upon any intellectual exercise that is not positively alluring to them. We are not alarmed lest our children should *study* too much—they and nature conspire too prevent any such evil. But nature and the child together are incompetent to prevent the wrong that our system imposes in abbreviating the hours of physical exercise.

We are aware that some of the order and fine show of the school-room must be sacrificed if this doctrine is adopted. But, we think, neither the health of the scholar nor the convenience of families can afford to construe our school-rooms into mere recitation-rooms, or halls in which to parade the military precision of classes. Let the school hours be divided between recitation and study, and the scholar will have time enough for necessary exercise. The body will be encouraged to keep pace with the growing intellect. The winter evenings will come to be envied seasons of rest, of and for pleasant reading. What is now a drudgery and a bore to so many—the Common School—would become a pleasure, and of course a most certain profit.

We observe that the Boston Friends of Education have taken the very ground we urge, and discourage strongly the practice of giving the Public School children tasks to be overcome out of school. They may have gone too far, but the importance of the subject warrants our careful investigation of the matter. All such reforms, the public look to physicians to initiate. If they sound the alarm, and unite to protest against any patent evil of the sort, there is no question that the authorities will soon interfere to protect the suffering of the children, and save the next generation from its threatened impotence.

‡ ‡

A GLORIOUS CHANCE.—A correspondent of one of our exchanges, in speaking of the new building erected by the Crosby Street Medical School, says :—"The able and enlightened professorial corps of this institution must fully appreciate this fact," (the greater need of educational than architectural reforms) "and could they shake off their timidity, might seize the golden opportunity of immortalizing themselves by establishing a school which would rival those of the old world."

The architectural reforms about the new building, to our thinking, consist chiefly, if not entirely, in making stores in the basement, convenient enough for assisting in paying rent, but which cramp the other and more important parts of the building. We particularly desire that, when our friend, Prof. Gilman, shakes himself, we may be there to see.

TO ALL WHOM IT MAY CONCERN—HOW THEY DO IT IN VIRGINIA.—The November Stethoscope thus discourses editorially, and elegantly: "When a well-educated physician, not content with the honors and emoluments of legitimate practice, but under the pretext of being a specialist, resorts to the tricks of the mountebank, or *in any other manner soils his garments with quackery, for the love of lucre*, such an one quickly finds his level in our latitude. His depredations are confined to the most vicious, thriftless classes, and don't pay. Here in slave-holding old Virginia, intelligent gentlemen protect the laboring classes from such vampires. We have no cod-fish aristocracy or

wash-tub gentility to give tone to our society or currency to *scientific discoveries*." (We have corrected a typographical error, but the italics are in the original.)

A quotation concerning the Hunters of this city is the occasion of these remarks. As the relations of a physician who falls into quackery are the same to the profession here and almost everywhere else, there seems comparatively little occasion for such an especial display of the fact in the "old Dominion." But we desire to congratulate the "intelligent gentlemen" of Virginia on their defence of the laboring classes from such vampires, and to suggest that they adopt some means for defending each other from the same ; for, if report be true, glorious old Virginia has quite its share of intelligent representatives among the patients of the Hunters and Fitches.

NEW MEDICAL JOURNALS.—The Atlanta Medical and Surgical Journal is received. Three numbers have been issued, well printed on good paper, with good matter. It is edited by Profs. Logan and Westmoreland, of the new Medical Institution at Atlanta, Georgia. They have our best wishes for success in their arduous undertaking.

The Medical Counsellor, of Columbus, Ohio, has not, we believe, been formally mentioned by us, though we have frequently quoted from it. When it first appeared, we remarked to a friend, that the publisher gave too much for its price, which, it seems, he has found out. We rejoice to say that the Counsellor, before the end of its first year, has acquired a good standing by the mode in which it is conducted by its editor, Dr. R. Hills, and comes every week with something rich, rare, or racy.

THE NEW YORK MEDICAL TIMES.—Last month we wrote a paragraph congratulatory on the change in the editorial corps of this journal, together with a short sketch, biographical and personal, of Dr. J. G. Adams. Learning that he was again attacked by one of his "depressed turns," occasioned by or accompanying the mental malady under which he labors, we at once suppressed the sketch, it not being entirely complimentary. Now we have to write our con-

gratulatory on the occasion of Dr. A.'s retirement, and the occupation of the chair editorial by Dr. Bulkley. Although we have been pained by the course pursued by Dr. Adams, we have attributed its erratic peculiarities to the mental malady rather than to the individual. Under Dr. Bulkley the journal will, we doubt not, be free from its faults, and we certainly are glad to mention the return of this amiable gentleman and friend to editorial duties.

APPOINTMENT.—The Chair of Operative Surgery in the University of Vermont has been offered to and accepted by Dr. D. S. Conant, of this city, Demonstrator of Anatomy in the New York Medical College. Dr. C. will bring to the Chair scientific ardor, ability, and experience, which abundantly justify the selection from ever so large a number of applicants.

ANONYMOUS LETTERS.—We have been favored with a few of these interesting documents lately, and beg the writer to refrain from sending any more. Such as these have been, tend to lessen our respect for human kind, while they are not done with sufficient intelligence to conceal their author.

ITEMS.

THE Treasurer of the Massachusetts Medical Society announced, at the last meeting, that he had received the sum of *one hundred dollars* from a member of the Society, for a prize for 1857, on conditions similar to those of 1856—on the following theme:—"We would regard every approach towards the rational and successful prevention and management of disease, without the necessity of drugs, to be an advance in favor of humanity and scientific medicine."

INSANITY TREATED BY QUININE.—M. H. Legrand du Saulle communicates a case of insanity of a double form, treated successfully by sulphate of quinine. The patient, a female of 34 years, and the mother of a family, had been subject to periodical attacks of religious melancholy, lasting for 6 days, and then succeeded by furious mania,

lasting about the same length of time, and which, upon passing off, gave place to an interval of 11 days, during which the health, intellectually and bodily, seemed complete. The sulphate of quinine was prescribed, and continued without interruption from March 3d until April 10th, gradually increasing the dose from 4 grains to 2 scruples. At the usual period for the accession of the melancholy, only a slight dullness appeared, and for three years the affection has not returned.—*Annales Medico Psychologiques*.

ANTIMONIATE OF QUINIA IN INTERMITTENTS.—Dr. La. Camera, of Naples, in treating a solution of sulphate of quinia by a solution of antimoniate of potassa, has obtained a white product crystalized in needles, bitter to the taste, and soluble in hot water and in alcohol and ether. This antimoniate of quinia has given excellent results in periodical diseases, both simple and complicated with rheumatism, in sub-continued fevers of Torti, and in pernicious fevers. The dose is 0.4 grm. to 0.6 grm. during the apyrexia, and it is rarely necessary to be administered a second time.—*Jour. of Pharm.*

ANECDOTE.—Sir Richard Jebb used to tell a story of himself which made even avarice comical. Attending a nobleman whom he thought ought to pay him five guineas at each visit, he received only three. Suspecting some trick on the part of the steward, from whom he received it, he, at the next visit, contrived to drop the three guineas. They were picked up and again deposited in his hand ; but he still continued to look on the carpet. His lordship asked if all the guineas were found. "There must be two still on the floor," replied Sir Richard, "for I have but three." The hint was taken, and his trick was successful.

THE AMERICAN MEDICAL MONTHLY.

DECEMBER, 1855.

PART I.—ESSAYS, MONOGRAPHS, AND CASES.

Henry Cavendish and the Discovery of the Chemical Constitution of Water ; a Lecture, Introductory to the Course on Chemistry, in the National Medical College, Session of 1855-6. By Prof. LEWIS H. STEINER, M.D., &c., &c.

To the student of any particular branch of human knowledge, one of the most interesting subjects is the history of the discovery of its principles, and the various incidents in the lives of those men who have given an impetus to its study. *Here* he can see how many difficulties had been encountered before the very basis of knowledge was attained ; how many days and nights of toil were consumed in quarrying from the rough mountain the huge blocks, and in subjecting these to the ponderous blows of heavy hammers, as well as the fine strokes of delicate chisels, so that they could be used in laying the foundations and shaping the corner-stone of the superstructure, which now strikes the eye with its symmetrical form and passing beauty. He will find that each step in the progress of a science has been marked with labor of the most intense kind ; that, although the results are striking and seemingly self-evident, they are no more so than the erection of some grand

architectural structure, some noble old cathedral pile, where the architect's idea has been so well carried out in every part, that the spectator is forgetful of the enormous cost, the great expenditure of money, and time, and human labor, required to develop and represent this idea. Every course of stone has been laid with care, and much fatigue has been undergone in placing it so that it shall be able to withstand the weight of those destined to be placed above it. And all depends on the foundation being securely laid, deep below the destructive influences of the frost, and on the solid clay or still more solid rock, so that no ordinary tempest or earthquake shall unsettle those walls which embody the idea that had existed in so much beauty in the architect's mind.

No study can be more instructive than an examination of the difficulties the great men of the past have experienced in their toilsome investigations. We not only learn to appreciate the importance of the latter, but we acquire a knowledge of the causes which impeded their progress, and which we should avoid in conducting similar original investigations for ourselves. Thus profit is not only directly derived in the way of knowledge gained, but indirectly also, since we learn to avoid the shoals and quicksands on which the strong barks of others have nearly been made perfect wrecks.

The history of Chemistry is full of most interesting facts connected with its great discoverers, and it is well for its students to rest awhile from their labors and to peruse these with care, so that they can estimate properly how great is the light under which they now prosecute their studies, and to whom they are indebted for it. It has been thought that some things connected with the history of Cavendish and his discovery of the chemical constitution of water might not be unprofitable or uninteresting.

Henry Cavendish was one of those few men, coming from the wealthy ranks of society, who have not only been Mæcenases to science, but who have expended their time and talents, as well as their money, in its cultivation and advancement. His name and his fortune, his intellect and his life, were freely expended in the cause of science, so that when the great French mathematician, Biot, summed up his character, he felt

that he could truly say, that Cavendish was "*le plus riche de tous les savans et probablement aussi, le plus savant de tous les riches.*"

He was the son of Lord Charles Cavendish, the third son of the second Duke of Devonshire. The family can be traced as far back as 1366, in the reign of Edward III., and it seems to be singularly marked, according to Dr. Wilson,* "for the high moral character which for so many centuries it has maintained."

He was born at Nice, October 10, 1731; entered the University of Cambridge December 18, 1749; and left the same, without graduating, in 1753. Of his early life we know comparatively nothing, partly on account of the neglect of contemporaries to record such incidents, and partly on account of the peculiar retiring habits of the man himself, which prevented him from speaking of his early life or indeed of unfolding his inmost character even to those who knew him best. He became a member of the Royal Society in 1760, and from that time up to the period of his death, in 1810, presented many most valuable papers to this Society. We find him spoken of† as "an excellent mathematician, electrician, astronomer, meteorologist, and geologist, and a chemist equally learned and original. In the fullest sense of the term, a natural philosopher; and had he published during his lifetime all the researches which he completed, his reputation would have been much wider and more varied even than it was." But a natural repugnance to appearing before the public prevented him from doing that thing men are so prone to do—to announce the novelties they have discovered, or even to magnify their importance.

As a man we find nothing in his character to love—a stern, impassive representative of a cultivator of science and nothing else. His biographer describes him‡ as one "who did not love; he did not hate; he did not hope; he did not fear; he did not worship as others do. There was nothing earnest, enthusiastic, heroic, or chivalrous in his nature, and as little

* Life of Cavendish, p. 14.

† Life of Cavendish, p. 19.

‡ Life of Cavendish, p. 185.

was there anything mean, grovelling, or ignoble. * * * *
An intellectual head thinking, a pair of wonderfully acute eyes observing, and a pair of very skilful hands experimenting or recording, are all that I realize in reading his memorials. His brain seems to have been but a calculating engine ; his eyes inlets of vision, not fountains of tears ; his hands instruments of manipulation which never trembled with emotion, or were clasped together in adoration, thanksgiving, or despair ; his heart only an anatomical organ, necessary for the circulation of the blood."

It may be fairly asked, why bring such a character forward for examination? Surely it is not desirable that it should be imitated? Are we not created for grander and nobler purposes than to be mere negations in a world where one's social influence is of such immense importance? Is it enough *not* to be a villain, a debauchee, a murderer? Or, rather, is it not our duty to be *something* that shall create an influence for *positive good* on our fellow-men? To this the answer must be made, that the character of Cavendish is not introduced as a subject of admiration, or for imitation, but rather as a warning to all men who cultivate the intellect, that they do not neglect the social portion of their nature. While they are rising higher and higher into those regions where an almost intuitive power is given them of perceiving the secrets of nature, it is necessary to strengthen the links of that chain which binds man to man, and which become brighter and brighter with each deed of love and philanthropic kindness. The character of Cavendish thus may serve as a warning set up in the highway of science, to let men beware of immolating all that is common with their fellow-men on its altar, although the investigations they may prosecute shall eventuate in much general good. Their duties are more extensive. *as men*, and while students of science they must not forget these, else we shall class them as Cavendish was classed, as "a cold, clear intelligence, raying down pure white light, which brightened everything on which it fell, but warmed nothing," just as the cold moon may light the traveller's path across the trackless snows, but not contribute one genial ray of heat which shall invigorate his strength, contribute to his comfort, or help him to withstand the icy blasts that are so furiously beating against him.

A word as to the subjects which claimed attention from Cavendish's clear mind, and the general nature of his contributions towards their full elucidation, and we shall proceed to the special discovery we wish to examine at this time.

The determination of the specific gravity of the earth occupied his attention for a long time. His determination (A. D. 1798) was 5.4; and although many experimenters have repeated *his* experiments and made others with reference to the same subject, this number has not been materially altered, the decimal only having been found incorrect, and the specific gravity now being considered 5.6. He determined the freezing point of mercury as between 39° and 40° Fahrenheit, by a series of experiments which were performed, (A. D. 1782,) in accordance with his directions, by Governor Hutchins, at Albany Fort, Hudson's Bay. Prior to this, it had been considered by Braun at between 300° and 400° Fahrenheit; and the most singularly discrepant views were entertained as to the exact point. The consideration of many subjects connected with heat is so closely bound up with a proper knowledge of *this* point, that its importance will be at once recognized.

Next we find him making some experiments relative to the exact composition of the air; and although the two main constituents of the air were already known, yet it was left for Cavendish to show, that in any given quantity of air, the maximum of consumption of its oxygen by a burning body was one-fifth, and that the per centage of this gas in common atmospheric air was 20.833. The approximation of this determination to that attained at the present time, by the aid of the delicate balances which our scientific mechanics have furnished us, is most wonderful, and can be only understood when we recollect that it was the result of many hundred analyses of the air made during sixty successive days in the year 1781, by this indefatigable experimenter.

In Pneumatic Chemistry, or the chemistry of the gases, although he is considered the fourth in order of time among the English chemists—the other three being Hales, Black, and Priestly—yet he is entitled, on the score of discovery, to a rank along with the first. Dr. Wilson very truly says, “We have done little more in later times than extend, improve, and,

as we complacently say, *perfect* Cavendish's processes for the analysis of gases, and that we differ from him more in our mode of interpreting certain of the phenomena he witnessed than we do in our methods of investigating elastic fluids." His thorough knowledge of a proper *modus operandi* with the gases made him adopt the securest methods of experimenting, so as to allow of the least possible chance of a failure. Accordingly we find that, despite of the imperfection of apparatus (which was exceedingly imperfect and complicated), despite of the general ignorance of both physical and chemical properties of the gases, despite of the thousand and one difficulties that at all times beset the discoverer's path, the experiments of Cavendish were accomplished with an accuracy that our better knowledge of the subject, and command of more perfect apparatus, scarcely make us capable of excelling. In the school of these experiments, his attention was directed to the rationale for the formation of globules of water whenever the electric spark was passed through a mixture of hydrogen gas and atmospheric air, the result of which was the announcement of the greatest discovery of modern times, that of the exact composition of water—and one on which, in our opinion, the present character of chemical science rests as its true basis—without which the whole of analytical chemistry would be at best but a series of shrewd guessings at the composition of material substances, and synthetic chemistry would be confined to the *accidental* formation of substances, instead of that series of sure results with which we find it now abounding.

I call the announcement of the discovery of the composition of water the initial point in the history of rational chemistry, whether we view it in the departments of analysis or synthesis, in medical chemistry, or chemistry applied to the arts. Prof. Playfair has not gone too far when he stated in his lecture before the Society of Arts, Manufactures, and Commerce, that "the discovery of the composition of water has given to Industry a vitality and an intelligence, the effects of which it would be difficult to exaggerate."

Let us briefly examine the history of this discovery, and then see in what way it has been of so much importance to mankind. In doing this it is not desirable that we should involve

ourselves in the polemic arguments that have been brought forward by the friends of two other great men, who are said to have made the discovery prior to its announcement by Cavendish. Much ill-feeling has been excited by the friends of Watt and Lavoisier on this subject, and no less a person than M. Arago has taken the position that Watt really was the discoverer, and that Cavendish had filched all his knowledge of the composition of water from a letter which Priestly had received from Watt. Without going into an examination of this serious charge, which would involve a tedious enumeration of many circumstances to us of no interest, and which would only lead us to the conclusion arrived at by all impartial English observers, that Cavendish was the prior discoverer, we need only say that the charge of plagiarism is entirely dissonant from the general character of this great man, who seemed under all circumstances equally careless of praise or blame from the world.

Priestly and Warltire found, whenever hydrogen gas and atmospheric air were exploded by the electric spark, that there was a deposition of moisture on the inside of the vessels containing the gaseous mixture. Prior to this, however, Macquer, in 1766, observed that whenever a glass vessel was held over a burning jet of inflammable gas, that moisture was formed inside of the vessel. Warltire explained this by the supposition that the gases contained some water diffused through them, and that this, being condensed, appeared in drops on the sides of the containing vessel. Cavendish found that there was no diminution or increase of weight in the vessel after the explosion, but that a volume of hydrogen twice as large as the oxygen in the air had disappeared, that it had left its gaseous condition, and was converted into water. He performed the experiment on a still larger scale, so that this fluid might be examined, and arrived at the conclusion "that this dew is plain water." The after-course of his experiments was directed to the determination of the quantities of hydrogen and oxygen necessary to form water. He discovered that if one volume of oxygen and two of hydrogen were exploded in any way, the result was the conversion of the whole of the mixed gases into water.

Now, how does this discovery, so disconnected at first sight

from the other facts of chemistry, affect the whole progress of the science? How does the simple fact of the knowledge of the true composition of water bear so important a part in the progress of chemistry as to be considered by any one as the initial point in the history of this branch of study as a science? Might we not have a knowledge of all the other elements, and yet remain under the belief that Aristotle and thousands of his followers held, that water was an elementary substance? Could we not have unfolded the arcana of nature without first having cleared up this point, and considered the bland agent which nature uses in effecting the wonderful works of change as an elementary substance?

To all of these interrogatories, the more we think over the subject, the more impressive and emphatic must be our negative. Nothing could have been done which would not have been involved in all the mystery and obscurity that marked every result of the chemist's labors prior to the year 1781. And this is perfectly apparent, when we reflect over the paltry theory of Stahl, as to combustion, which was at that time leading all the world into a maze of confusion with its queer reasons for the combustion of a body, because it had *a something* called phlogiston in it, which regulated the duration of the combustion by the amount present, and when all of this substance escaped, *then* the body ceased to burn. It was necessary to have some plausible, and not only plausible, but some correct theory of combustion, as well as some account of the composition of water. These were both furnished by Cavendish's experiments.

In order to understand *quantitatively* the composition of bodies, it is necessary to get the combining number of some one elementary substance,—to have that well ascertained, and then we are ready, by the known laws of chemistry, to ascertain the combining numbers of all bodies, with which this particular substance forms combinations. In other words, the *equivalents* or *atomic weights* of all the elements could never be obtained had we not that of one single element to commence with. But it would be impossible to obtain the combining number of an element, without experimenting with it when in a state of combination, and hence it is necessary in order to

obtain these numbers, in which all certainty in quantitative chemistry is founded, that we should have a certain knowledge of the weights with which two elements combine in the formation of some known compound. This could be done in the case of water, after the compound nature was once fully understood. A Dalton could weigh the constituent elements and find that the oxygen always weighed eight times as much as the hydrogen, although the latter was twice as much in bulk. After experiments proved that these numbers, 8 and 1, indicated the only proportions in which these two elements would unite with any other elementary substance, and that each one of the others had also a number peculiar to itself, indicative of its combining proportion. And so, *on this discovery*, we may say, was reared that essential guide to all our chemical labors, the atomic theory.

It was a grand discovery, to find that all the substances in nature were allowed only to combine with each other in fixed and definite proportions, and that thus, instead of an infinitude of compound bodies, produced by an heterogeneous union of the elements, the number was to a certain extent fixed and immutable. The proportions with which they combine together is capable of being expressed in numbers. The chemical constitution of all matter becomes, when viewed in this light, beautifully illustrative of the poetry of science. No longer need we leave our own planet to behold this poetry of science, and, with the astronomer, roam through the wide circuit of the universe, as it, with silent grandeur, acts its epic in the measured numbers which his science reveals with so much accuracy. For though our knowledge of the mighty orbits of planets, and the perturbations which these occasion on each other's movements, impress us strongly with the harmony which pervades all creation and enable us to understand what the ancient philosopher spoke of as the Music of the Spheres; yet is not this harmony confined only to the movements of these great bodies, but permeates every particle of their structure, and beautifully governs the composition of all matter.

The slightest change in the composition of a body is sufficient to alter its nature as an innocuous substance, so that it shall become a deadly poison. Add but one atom of hydrogen

to the atom of water, cause a chemical combination to take place between the two, and instead of a supporter of life, and a substance necessary to the life-giving circulation of plants and animals, we find a poisonous substance of so caustic a nature, that when brought into contact with the tongue it produces at once a powerful burning sensation. Fortunately for all living beings this combination is not readily effected, nor is the compound a very persistent one. Otherwise we should be in danger of being poisoned by the very substance which is now the blandest in nature. How well does this fit us to understand the beautiful remarks of Farraday, as to the effects of a knowledge of these facts on the contemplative philosopher? "When I consider," says this distinguished savan, "the multitude of associated forces which are diffused through nature—when I think of that calm and tranquil balancing of their energies which enables elements, most powerful in themselves, most destructive to the world's creatures and economy, to dwell associated together and be made subservient to the wants of creation—I rise from the contemplation more than ever impressed with the wisdom, the beneficence, and grandeur, beyond our language to express, of the Great Disposer of all." *

What an argument against the existence of blind chance is this exact proportion in which elements will alone unite with each other! How consummate a wisdom is thus shown in the formation of the smallest atom of water, which, wherever found, exhibits the same composition. The comtemplative chemist finds himself overcome when he sees the wonderful wisdom, that not only knows the fall of the sparrows to the ground, but has assigned eternal laws to the structure of every atom of that ground itself.

I have assumed here that the full knowledge of the composition of water led to the discovery and announcement of the atomic theory. It was not the special substance under examination by Dalton when the theory suggested itself to his mind; for that was the composition of the compounds of nitrogen and oxygen. But these could not have been understood unless Cavendish had prepared the way for it by first explain-

* Farraday's Lectures, p. 191.

ing the composition of water. It is proper that this explanation should be made lest a charge of innaccuracy be brought with reference to our statements. The atomic theory was the indirect result of this great discovery of Cavendish.

But we have said the discovery of the composition of water was an initial point in the history of rational chemistry. What has been done by this science in the last seventy years? The answer to this question will show the importance of the discovery. In framing such an answer, the difficulty is to know where to commence, since chemistry has intertwined itself so much with the progress of every science, that its benefits are hardly to be appreciated by us unless we closely examine the history of the past, and after having obtained a full knowledge of the comparative ignorance of those days, then look around us and see the blessings which science has showered on us in the present.

Every art has been supplied with a knowledge of all the substances that enter into the composition of the materials it employs, or the tools necessary for their proper working. The perfection of processes, which were formerly dependent entirely on the chance combination of proper quantities of the materials employed, is now so great that empiricism has ceased its rule in the mechanic arts, and the chemist's discoveries constitute the bases on which these are constructed with their huge proportions and wonderful adaptation to the wants of man.

The *materia medica* is being gradually explained, and its potent extracts, obtained through the aid of pharmaceutic chemistry, are now employed by the scientific physician to the alleviation or cure of disease. He finds himself no longer confined to a mere empirical exhibition of enormous quantities of drugs, but more elegantly and efficaciously uses their proximate principles, while he rejects their inert constituents. But more than this yet, many of the recondite processes of the living body have been determined to be purely chemical, although regulated by the vital force, and hence he learns to produce such modifications in them as are required when disease has forced them to assume an abnormal form. Much thus of philosophic, rational medicine owes its origin to these

improvements of chemistry. The physician of the present day who neglects its teachings, gropes along his path with a blindness that is as pitiable as it is unjustifiable. He blindfolds his eyes to keep out the glorious sun-light of science, which is shedding a dazzling radiance over the pathway of his brethren ; he wanders along alleys and bye-ways, when the straight and broad highway could bring him at once to a terminus of all his labors ; he prefers darkness to light, and by some peculiar mental obliquity is prevented from adopting the direct path, but works along in the circuitous wanderings of that curse to all success—*Routine* ! He has joined himself to the ignorance of the past, and rejected the knowledge of the present, and an inward turning of all thoughts on the past, has made him “ the man behind the age ”—a species of skeleton in the social circle of his profession, from whose bones and worm-eaten ligaments his brethren can demonstrate to their students what was the structure of medicine before the spirit of science entered it, and made dry bones to move, clothed them with muscle and cellular tissues and skin, caused artery, vein, and nerve to ramify around them, and infused the breath of active, thoughtful life.

Analytical Chemistry has revealed to us the quantities of the various elements which enter into the formation of the inorganic kingdom, and also of many portions of the organic kingdom, and has enabled the chemist, by synthesis, to form inorganic compounds, far exceeding in number and variety those found in nature, and of varied uses to mankind. Indeed, it has enabled him to use the various agencies of nature in so many novel ways, that new branches of art have sprung up all over the world, which have given thousands of artisans constant and profitable employment. Chemistry has become a science of most certain vitality, and gifted with the power of imparting its vitality to every branch of human industry with which it has anything at all to do. The artisan must feel its importance, and he desires his children, male and female, to have a knowledge of its principles, so that they can avail themselves of the discoveries of the day as they appear, and have an intelligent appreciation of their bearing on what has been done in the past, or may be expected to be done in the

future. Hence it is one of the branches of study which occupies a prominent place in any well-digested system of education, bearing with it the interest which always is attached to the study of anything that directly concerns man as man, and which is capable of illustration in an experimental way. Popular lectures on the subject are devised to meet the want with those who had not the means of studying the subject in their school-days, and the crowds of ladies and gentlemen attending these lectures attest the general interest of the community in a subject so manifestly important as chemistry.

Surely all this, if it has had its origin in the impetus given to the study of chemistry by Cavendish's discovery, must surround the latter with so much importance that no excuse need be given for the introduction of the name and character of Henry Cavendish to the present audience.

But we have not done with Cavendish as a chemist. We must not forget that his right to the discovery of hydrogen gas, as a *distinct* element, is undisputed, even by his enemies, although they have endeavored to rob him of the priority of the discovery of the composition of water. This gas was known prior to his day, and Thomson considers its combustibility as known at the beginning of the eighteenth century.

Cavendish, in the commencement of his observations, labored under the disadvantages which clung to a student of the Phlogiston theory. He found that an inflammable gas was freely discharged whenever iron, zinc, or tin were brought into contact with dilute sulphuric or muriatic acids, and quaintly says: "Their phlogiston flies off without having its nature changed by the acid, and forms the inflammable air."* He imagined thus, at first, that the heating principle of bodies was this phlogiston, which was supposed to fly off during the phenomena of heat and light, and that when metals were plunged in either of these dilute acids, it escaped in the form of an æriform body, which he called inflammable air. Afterwards, however, he advanced the idea that inflammable air was a combination of the mysterious phlogiston and water. Its different properties were carefully examined—the circumstances under which it would burn, and how much atmospheric air must be present, in order

* Wilson's Life of Cavendish, p. 197.

to allow of perfect and entire combustion of the gas were carefully noted. Not being satisfied with this, he advanced to the discovery already noticed, and finding it a constant constituent of water, arrived at the conclusion that the gas given off, whenever the metals mentioned were brought into contact with dilute acids, was furnished from the water with which these acids were diluted. His views as to the real nature of the gas, divested of the foolish nomenclature of the Phlogiston School, show that he had a clear idea of its nature and properties.

During his examination of the gas, his attention was directed to its weight, and he made, according to his biographer, "the first *successful* attempt to compare the density of a gas with that of common air." The attempt had been made previously by Hawksbee and Greenwood, as well as Hales. Their attempts failed for various reasons. It was left, however, for the mind of Cavendish, which was essentially mathematical, to devise such processes and apparatus as would enable him to experiment without any fear of failure. Quantitative examinations were those alone which satisfied his mind, and to the test of weight and measure he endeavored to bring every subject which he examined, not being content until some satisfactory answer was obtained from this test. Hence he was the first who found out that the different gases have, for equal bulks, dissimilar weights. His estimate of the specific gravity of hydrogen was found entirely too large, as he made it about one-eleventh of atmospheric air, whereas the latter is about 14.4 times heavier than it. Such a near approximation, taken into consideration with the necessary imperfection of apparatus at that day, and the probable imperfect removal of atmospheric air from the vessel into which the hydrogen was admitted, must entitle our chemist to the greatest praise for his accuracy, instead of blame for a want of accuracy.

The next subject we find him examining with his usual care and patience was carbonic acid, or fixed air as it was then called. It would be difficult to say who was first acquainted with this acid gas. Paracelsus seems to have known some of its properties, though its name of fixed air was given by Dr. Black, who examined it prior to the date of Cavendish's ex-

periments. Black seems, however, never to have published any account of its properties in general. In 1766, Cavendish took up the subject, and prepared the gas for examination by the action of chlorhydric acid on marble, a method still adopted by the venders of carbonic acid water as the most economical and convenient. His researches resulted in the acquisition of a full knowledge of all its properties, even getting the specific gravity very nearly correct.

We must recollect that experiments could not be carried on then as now, with the aid of numerous laboratory appliances, such as glassware of an infinite variety of forms, the multifarious uses of illuminating gas for heating purposes, and the convenient purposes to which caoutchouc is applicable. The modern chemist is supplied with a vast deal to assist him in his researches which the chemist of even fifty years since was not able to command. Consequently, even approximate accuracy in the latter merits much higher praise than perfect accuracy in the former. Continued demand for scientific apparatus has stimulated the mechanic to contrive various means for meeting the chemist's wants, and this he has succeeded in doing so well, that every day affords some fresh evidence of his skill, and the useful assistance he can render to the chemist.

While Cavendish was performing his experiments with reference to the composition of water, by passing an electric spark through a mixture of hydrogen and atmospheric air, he came across a singular result, which had been altogether unexpected. The water produced by the explosion was found possessed of acid properties. This was proven by its converting the blue color of litmus into a red, and by its combining with lime and forming a salt. It was nitric acid. Whence could it have been derived? He followed this query with great care to its ultimate bearings, and soon saw that the electric spark produced an union of the two gases, nitrogen and oxygen, in the proper proportions to form this acid. The fact has been proven in a number of ways since Cavendish's day. Farraday* "has shown that if a piece of paper dipped in a solution of caustic potash be stretched a little below and between two brass balls, from one of which electric sparks are passing to the other, the

* Life of Cavendish, p. 261.

alkali will be rapidly converted into nitrate of potassa, and the paper become touch-paper."

This discovery was probably one of the greatest contributions he made to the cause of science, and it proceeded as a necessary consequence from the experiments with reference to the constitution of water. We have here a clear explanation of the appearance of nitric acid, to a greater or less extent, in all rain water. The passage of the electric current in every thunder-storm repeats, on a large scale, this experiment of Cavendish, and produces a small quantity of nitric acid. This however, only takes place directly along the track of the lightning; and hence but a small quantity of this poisonous acid is formed in the atmosphere, is absorbed by the rains and descends to the soil. But the electric flash does not only, as Cavendish thought, cause the union of the nitrogen and oxygen so as to form nitric acid, but if hydrogen be present also, it causes an union of the nitrogen with it also, and the consequence is the formation of ammonia, which neutralizes a large quantity of the nitric acid, and descends in the rains to invigorate the exhausted soil as nitrate of ammonia. It is not always easy to account for the appearance of this substance in the soil, unless we had been prepared by these views of Cavendish, to account for its formation in the atmosphere, and after transference by the rains to the soil. Nitric acid does not form a constituent of any rock which is widely distributed over the surface of the globe, and yet the nitrates are found always in fertile soils, and in some tropical climes, where there are frequent storms, the quantity becomes so notable that thick incrustations are found on the surface. This acid in the nitrate seems to have considerable effect on the growth of plants, and to be indeed a most indispensable constituent of good soil. Its presence in the soil, as conveyed to it from the atmosphere, is beautifully explained by the aid of this discovery of Cavendish. Prof. Johnston* remarks, on the subject of the formation of nitric acid: "After a thunder-storm plants appear wonderfully refreshed; in thundery weather they grow most luxuriantly, and other things being equal, those seasons in which there is much thunder are observed to be most fruitful.

* Johnston's Lectures on Agricultural Chemistry, p. 160.

Some have ascribed these results to the *immediate* agency of electricity on the growth of plants. Is it not equally possible that they may be connected with this necessary production of nitric acid." The Professor then goes on to state that this acid is difficult to detect in minute quantities; yet "how much must be formed in a thunder-storm, even in our climate (Great Britain), to make the presence of this acid *always* appreciable in the rain that falls—how vast a quantity in those warmer climates where such storms are so frequent and so appalling." Thus the agricultural profession has been supplied with a capital explanation of a most important subject, and the import of Cavendish's discovery is much more than he could have dreamed of. The importance of this discovery is still greater when we view it in its direct bearing on the question of the combustibility or not of nitrogen.

Cavendish's formation of nitric acid out of nitrogen, in the way just mentioned, proved conclusively that this gas could be oxidated under certain circumstances, or that it could be subject to combustion, using the latter term in its widest chemical signification. This has been seized hold of by Liebig and Johnston, and made also to subserve the purposes of agricultural chemistry, in the way of accounting for the immense quantity of nitric acid contained in some soils, far beyond that which could possibly be formed from the action of electricity on the atmosphere. Whenever organic matter containing nitrogen undergoes the processes of decay or putrefaction, ammonia is formed from the hydrogen of the water present, and this nitrogen. But this ammonia is rarely found present in very large quantities, although large quantities of nitric acid are readily recognized, and mostly in connection with alkaline bases, making nitrates. In fact, the presence of these alkaline bases determine the metamorphosis of the ammonia into nitric acid, through the combustion or oxidation of its nitrogen. The alkaline bases induce, so to speak, "this oxidation, by the tendency of these substances to combine with the acid which is formed by this union of the elements of which nitric acid consists."*

This explanation of Liebig, based on Cavendish's discovery,

* Johnston's Agricultural Chemistry, p. 163.

beautifully illustrates the immense importance any discovery in science may be to *present* and *after* investigations, and also how little able a discoverer is to realize the importance of the fact he has attained after long and toilsome research. Truth is indeed of such a nature that its value stops not at one point, but by inosculation many and various, extends its aid to all branches of knowledge, and binds them together by a common bond, so that what is useful to one branch will be seen alike important and useful to all, and *catholic* in all its peculiarities.

When we sum up the peculiarities of Cavendish as a chemist, we find them to be as follows : A mind perfectly free from all foregone conclusions, and hence specially suited to carry out new lines of investigation, and to interpret properly the meaning and bearing of the results therein attained. This is by no means one of the least important peculiarities of mind required by the experimenter. How many ridiculous estimates have been made of the results of experiments, merely because the glasses through which the experimenter viewed them, had been previously so colored that their true form and nature could not be clearly recognized? Thus monstrous theories have been warmly maintained because their authors have determined that such and such results should be produced by their experiments. The real nature of the results has been overlooked, and men have been led astray by their false interpretation, until some mind, unprejudiced by theories of its own, has examined them carefully, and has sifted them from all irrelevant matters, and arrived at the simple truth. The history of chemistry, past and present, is teeming with illustrations of this kind, and many really important discoveries have been overlooked while some apparent confirmation of an unsubstantial theory has been seized as pure gold by the blinded experimenter. Indeed, it is one of the most difficult of all things, to elaborate a course of experiments, with a mind perfectly freed from all disposition to give a certain complexion to the result, and to truly interpret only so much as is really presented by it. Too often the result is but used as a mirror, in which the chemist only sees his own darling idea reflected, without paying any attention to the real nature of that mirror, or to the obli-

quity of his vision, which is but viewing a projection forth of his own ideas in all their unsubstantiality, rather than the truth involved in the material form before it. Such was not the habit of Cavendish. Mistakes were frequently made as to the results of experiments, never on account of any peculiar theory to which he was determined, to bind them as illustrations, but on account of the slight knowledge which the world possessed of chemistry, and therefore its inability to recognize, at first sight, the full meaning of its facts. But repetition of his experiments enabled him to see errors, and to place himself right as to his conclusions. On this account he never published a paper on any subject until he examined his own views with the sternest critic's eye, and forced them to undergo the severest tests. There was no disposition to enter a *caveat* against any one's poaching on his grounds—no use of the meetings of scientific societies or the pages of scientific journals for the publication of ill-digested opinions on novel results of experiments. But all his published manuscripts show that they have been carefully digested—his opinions freed from all irrelevant matter, and tried and approved by, or rather based on experiment. The author of "Pursuit of Knowledge under Difficulties," says that "he never advanced anything in any of his papers which he had afterwards to retract."

It is evident also that, in addition to a mind free from any bias in the examination of his experiments, he was a careful manipulator. His apparatus was of the simplest character. He took no delight in complications of apparatus, which only impress the eye with their complexity and weary the operator. His mechanical skill as a deviser of new forms of apparatus was exceedingly small, but he had the still happier facility of adapting the old forms to his own purposes and making them available. Hence all the apparatus which has descended to our time from the laboratory of Cavendish is marked with great simplicity and even want of finish.

Another peculiarity of Cavendish as a chemist, and which has already been incidentally alluded to, was his fondness for quantitative determinations of all substances which he examined, and the accuracy of those determinations. This must have been the result of a mathematical turn of mind, which he

derived from his father, Lord Charles Cavendish, who was an excellent mathematician, "who had devoted himself to meteorology, and had paid special attention to the improvement of the thermometer and barometer, so that our philosopher was easily trained to the points essential to the accurate construction and employment of these instruments." This mathematical turn of mind caused him to combine the study of physics with that of chemistry, and the subject of electricity and the aurora borealis were well treated of by him. But its greatest influence was in the determination of accurate quantities in his examinations. The quantitative analysis of the air compares well with those since made with the best laboratory appliances. The specific gravity of carbonic acid gas, as determined by him, has already been shown to be approximately correct, and this is true of every quantitative determination.

If mathematical accuracy, great care and simplicity, and an unprejudiced mind, are essentials in the composition of the chemist, surely we have them here, combined in a most wonderful manner in the case of Cavendish. We are now led to see how these, with his remarkably original turn of mind and powerful intellect, enabled him to tower above his scientific compeers—to write his name high up among the benefactors of mankind, and to have a reputation as a scientific man which it must ever be the jealous care of his brethren to maintain with its original brilliance.

A few words on his character as a man and the cause of his peculiarities, and our task is done.

One of the most remarkable traits in the character of Cavendish was his extreme diffidence and indifference to society of all kinds. He was scarcely ever found in society, and never willingly entered into conversation with the opposite sex. This was carried to so great an extent that he never communicated orders to his female servants directly, but by means of a note directed to his housekeeper. An anecdote quoted by his biographer, Dr. Wilson, from Tomlinson, illustrates this perfect misogyny in the most amusing way. "One evening," says Tomlinson, "we observed a pretty girl looking out from an upper window on the opposite side of the street, watching the philosophers (the members of the Royal Society Club) at din-

ner. She attracted notice, and one by one we got up and mustered round the window to admire the fair one. Cavendish, who thought we were looking at the moon, bustled up to us in his odd way, and when he saw the real object of our study, turned away with intense disgust, and grunted out 'Pshaw!'" Dr. Wilson suggests as the origin of all this want of sympathy, that he lost his mother in early life, and that he was brought up away from the genial and humanizing influences of home. The explanation is exceedingly probable, for we cannot conceive how any one who has learned to appreciate the kind care of a mother, to prize those genial effects her sweetness of character and gentle disposition have produced in his own, to adore the purity of thought and feeling that so sweetly marks her life, without feeling the highest respect for the sex, whose gentleness is so much more powerful than our strength, that the stout man is often caused to bend the knee before it, and feel his own real moral weakness from the contrast. The man that has loved a mother can never have a low appreciation of the sex, if it were only for her sake.

But with all Cavendish's retiring habits he was exceedingly liberal, not knowing exactly how much he *should* give when solicited for a benevolent object, but always giving as much as any name on the subscription list. An anecdote of his liberality is given by Cuvier. A young man had broken a very valuable piece of apparatus, and the keeper of his apparatus came to tell him of it—the only answer he received was, "it is necessary for young men to break instruments, in order that they may learn how to use them—have another one made."

Routine marked his daily habits, which were the same for the greater portion of his life. The same style of clothing, the same place for his household affairs, even the same bill of fare for his dinner—truly has he been styled "a piece of intellectual clock-work"—that was not intended to produce any effect on mankind in any other department than that of pure knowledge. He has gone to his grave—one of the most distinguished of the benefactors of science—unwept, although honored.

It was thought that an examination of this great man's character, and his most important discovery would be useful

at the opening of our course on chemistry, since his name must be occasionally mentioned, and the sources from which information with reference to his life is to be gained, are but few. Large draughts of material have been made from the very fair and impartial account of his life by Dr. George Wilson, which is accessible to but few in this country.

It is pleasant to treasure up the little incidents connected with the history of great discoveries, and the lives of their authors. If the latter, in a social respect, does not inspire us with as much love and regard, as would a close examination of the life of one more peculiarly belonging to this country, that of Sir Humphrey Davy ; yet, we can profit by it, if we only learn to avoid the blemishes in our own character, which were so prominent in that of Cavendish.

Gentlemen, our science is connected with so many departments of research, that it demands the attention of every man, but most especially that of those who propose to themselves to adopt the profession of medicine as their calling, or rather those who feel themselves *especially called* to its study, for none others should enter the ranks of medicine. If the example of Cavendish stimulate you to the cultivation of chemistry with methodical accuracy and care, your results, if not so striking and imposing as his, yet I am bold to say, will be important in fitting you for your noble calling. The moral heroism of our profession, as exhibited from time immemorial, during the visitation of destructive scourges, and most especially within the season just past, is sufficiently great to demand the admiration of a gazing world. May you all be ready to exhibit the same unflinching attention to duty, having previously prepared yourself by honest and laborious study to accomplish such duty ! May the results of all your *studies and labors*, in the various branches of the professional preparation, fit you to become, not only great men, but what is much better, good men, useful physicians, each a hero in his sphere.

European Practitioners.—No. II.

MR. FERGUSSON, SURGEON EXTRAORDINARY TO H. R. H. PRINCE ALBERT.

In our last we gave a brief sketch of her Britannic Majesty's principal surgeon *in esse*; at present we shall furnish one of his probable successor. Some of our readers may possibly inquire, "Who is Mr. Fergusson?" and "Of what interest is Prince Albert and his 'surgeon-extraordinary' to us?" But Prince Albert, we take leave to inform them, is the gentleman who, as prince consort, at present rules England, and Mr. Wm. Fergusson is the individual who will one day make his appearance as Sir William Fergusson, Bart., Sergeant-Surgeon to the Queen, so soon as Sir Benjamin Brodie has shuffled off the mortal coil.

Mr. Fergusson is, moreover, on the whole, an estimable member of the medical profession, and he is a distinguished surgeon too. Barring an inordinate attachment to rank, which is, perhaps, inseparable from the position of a medical man in England unless he be wholly insensible to his interest, he has no conspicuous fault. He has not the mercenary, shop-keeping disposition of Cooper; he is superior to the hollow diplomatic trickery of Brodie; he possesses much of Liston's dexterity as an operator, without any of his coarseness; he is an able medical practitioner, as well as a good surgeon; and, therefore, as one of the future heads of the Medical Faculty in England, he is worthy of Transatlantic attention.

Mr. Fergusson was not originally destined for the profession of surgery. He was the son of a humble member of the Scotch Customs, or Excise Office, and was designed originally for the law. Some of his associates, in an aristocratic country like England, sneer at him for the humility of his birth; but this in reality only the more entitles him to our regard. At law he never acquired distinction, and in all probability never would. Though shrewd, and a man of the world in his address, he has a hesitating, prosaic manner of expressing himself in public, which would have prevented him from ever acquiring eminence at the bar, if his ambition had soared superior to the

level of an Edinburgh solicitor or attorney. He therefore acted wisely when, in the eighteenth or nineteenth year of his age, he abandoned the position of clerk in a Scottish lawyer's office, and enrolled himself as a student of medicine.

The Edinburgh Medical School at this period had attained a splendour and enjoyed a reputation such as its past annals had not seen, and its future will not see. The University of the city was not distinguished, though Monroe—*Tertius* or *Quartus* as he called himself, in consequence of being the third or fourth member of a family of hereditary drones who had held the office—was an able Professor of Anatomy, notwithstanding his insufferable laziness, and the prosiness with which he would bore his audience about his “father's catheter,” his “grandfather's catheter,” and his “own catheter,” as he held up for their edification a specimen of the instrument. Hope, too, was an able manipulist in chemistry, though with the exception of strontium—a discovery suggested by the potassium and sodium of Davy—he never made any great original invention, or propagated a single remarkable thought. The two Duncans, father and son, were amiable men, though at the best laborious dunces, who owed their offices solely to the merits of civic influence or self-election; and Alison is one whose intolerable heaviness still survives. But it was for its School of Private Lectures, or free lancers, that Edinburgh then was eminent; and it rejoiced in a *corps* which, as we have already said, its past annals had not witnessed, and its future can scarcely hope to see.

It would be idle for us even to attempt an enumeration of them now. Old John Barclay, one of the greatest anatomists who ever lived, had just disappeared from the scene. John was originally brought up for the pulpit; but his tongue having either stuck fast to the roof of his mouth, or he being afraid that it would do so, on his first appearance there, he resolved to devote himself in future, as he said, “to the body instead of the soul,” and he assuredly produced some works on anatomy, on life and organization, which—barring in some respects his useful, though, in others, harsh and far-fetched system of nomenclature—science will not readily let die. Turner, however, still was there to enlighten it by his elegant researches and discourses upon chemistry, before his removal to the College of

Stinkomalee or University of London. Lizar gave it the benefit of his anatomical knowledge, which really was great, though he was invariably distinguished for a species of innocent charlatancy or *niaiserie*, and Mackintosh enlightened by the profundity of his lectures upon the subject of women and children, though the gravity of his discourses was often strangely marred by the introduction of a sort of wit or humor, the oddest on record. Liston, too, was then a private lecturer in the Edinburgh School, and though savage as a brute, and coarse as a butcher, it is impossible to deny him the merit of great Titanic force. His abilities as an operator were as undoubted as his vices and his grossness as a man. It were as futile to deny his great inherent power in the one capacity, as to question his grovelling, selfish, and utterly faithless disposition in the other.

But a still more noted character, perhaps, than any of them, was Dr. Robert Knox, with whom Mr. Fergusson entered as a pupil, and of whom he shortly afterwards became the principal assistant. Knox was one of those extraordinary individuals, who look as if they never had been young, and seem as if they never would be old. Small-pox had ravaged his face frightfully in his youth, and left him but one eye—though that eye was a piercer, and he could, in most instances, see as far with it as can ordinary mortals with two. Though in many respects shrewd, however, he was in others strangely destitute of judgment, and, in all, utterly divested of moral feeling. The ugliest and most absurdly comical-looking man in existence, he was also one of the most dangerous. From lips thick as a whale's or a codfish's, and a mouth reaching from ear to ear, he would pour forth the most dulcet and entertaining strains. He was one of the first who rendered anatomical lectures agreeable, and in the rare cases in which he obtained admission into private society, he was equally fascinating. There was utter baseness, however, and hollowness in it all. If invited to your table, he would immediately set to work to seduce your wife, or your daughter, or your sister, or your maid servant; and, strange to say, though one of the most repulsive and ludicrous dwarfs in existence, he had a tongue so silvery that he generally succeeded. Could you have got rid of his ludicrous

visage, he would have equally hoodwinked yourself; and the most extraordinary part of the whole was, that he was so utterly destitute of moral feeling as to see no impropriety whatever in the matter. He bartered his own sister just as readily as he would have debauched yours, and he stared upon you as a fool if you hinted there was aught unusual in the arrangement.

It was Fergusson's misfortune in early life to become connected with this man, and their connection affords the only ground for the slightest imputation on Mr. Fergusson's fame. We should willingly pass lightly over this matter, but it is wholly impossible to ignore it. The impediments thrown in the way of dissection were so great, and the price of dead bodies in the winters of 1829-30 in Scotland became so high, that living men were sacrificed for the sake of the sums which their corpses would bring. All the anatomical lectures of Edinburgh were destitute of subjects; but Knox's room was abundantly supplied, and hence he had not only an enormous number of students, but he had the folly besides to inform them that, so long as they came to him, they should invariably be provided. Inquiry was instituted, and it was ascertained that twenty or thirty poor people had been taken from the streets and murdered just as the wants of the dissecting-room required. A fierce outcry arose, and Knox, with his assistants, was loudly inculpated. That Knox himself was privy to the whole affair we entertain not the slightest doubt. With his usual moral imperception he even asked: "What is the use of these brutes if not to contribute to the advancement of science?" and as his sister had long maintained a *liaison* somewhat more than platonic with the Lord Advocate or public prosecutor of Scotland, he successfully employed her influence with that official to keep his own name out of that indictment which deservedly brought two others to the gibbet. But that Fergusson and the other assistant (Jones) was privy to it, we do not in the slightest degree believe. Fergusson is, perhaps, too much disposed, when his own interests are concerned, to connive at the misconduct of "the powers that be," and the other is a stupid creature, who, though the author of a tolerable work on the eye, devoutly believes in witchcraft. We should have suspected Jones infi-

nately more than the junior assistant ; but really, so far as can be ascertained, no blame attaches to either.

They both, however, found it expedient soon to terminate their connection with Knox. Jones went abroad to Germany, whence he did not return for a number of years, and Mr. Fergusson established himself as a lecturer on surgery in the city of Edinburgh. Knox, meanwhile, became so wild and outrageous in his remarks, that he utterly lost his position as a teacher. Of all topics in the world he had the folly and the indecorum to choose that of the Virgin Mary for introduction into a course of anatomical lectures. The people of Scotland, it is well known, are Protestants, and do not attach the same importance as the Catholics to that personage, nor hold her in the same reverence. But they shrank in disgust from the coarse terms with which Knox now launched his satire against her unchastity, and the consequence was that a class of four hundred soon dwindled to one of four ; while in the neighboring and still more Calvinistic town of Glasgow, to which Knox next attempted to migrate, he escaped the compliment of a public stoning only in consequence of his now transparent insignificance.

The noblest anatomical school in the world—that of John Barclay, whom Knox had succeeded—was thus broken up, and the utter debasement of its principal member paved the way for the destruction of the system of private lecturing, which shortly afterwards followed. Liston removed to London, and, though the field was thus left comparatively open to Fergusson, he never succeeded in congregating a numerous class. A strange and not unintellectual little hunchback, named Syme, had got possession of it by means of a superior suppleness and address. Syme was a cousin, or some relative of Liston's, a high tory, and like every one who came in contact with that selfish and sensual savage, had been grossly maltreated by him. He consequently went over to the Whig, or opposite camp ; and whiggery being predominant in Edinburgh, Fergusson, who attached himself to toryism, had no chance. He was, moreover, voted low, for having married a respectable tailor's daughter, with whom he received a fortune of \$100,000—the Whigs of Edinburgh being remarkably fastidious on the sub-

ject of birth. His position there, in all respects, consequently, soon became exceedingly disagreeable, and he accordingly, on the earliest opportunity, exchanged it for a professorship in the British metropolis.

King's College, London, was the spot he selected. It was a nucleus of bigotry, cant, and intolerance, which had been established in opposition to the Jew University of London, or stink-omalee. A man named Arnold had previously held the office, and had the folly to abandon it because he was not allowed to retain the surgery of some opposition hospital, and indulge in other airs wholly unjustifiable. He was in fact conspicuous for nothing but for his uncouth aspect, ogre-like appearance, and a tremendous pair of jaws, which appeared to be moved by machinery. The directors of the institution had consequently become dissatisfied with his absurd pretensions, and readily welcomed the more handsome, wiry, and ductile Fergusson. The only difficulty to get over was the swallowing of the Thirty-Nine Articles of the Church of England. In their advertisement they had stipulated that the successful candidate must be an orthodox member of the Church; and some of Fergusson's friends, who knew that hitherto he had been a scrupulous Calvinist, apprehended this would prove an insuperable obstacle. Like a true man of the world, however, he bolted the obnoxious Articles, and being in other respects as staunch a Tory as the Archbishop of Canterbury himself, he was elected, and soon on the high road to fortune and fame.

In this respect we cannot blame Fergusson inordinately, nor judge of him by the higher rules of political morality. The medical profession is unhappily in England so degraded, that no member of it is allowed to hold an independent opinion, if that opinion be in opposition to the existing powers. If a Whig government be in office, he may possibly venture on a slight show of liberal sentiments; but woe to him, if he surpasses the official scale, and entertain any thought for the freedom of man. The safer course for him, if he values his future prospects, is to take the high Tory side, to see nothing oppressive in what the people suffer, or discern naught improper in what the court does. If a member of the royal family should seduce his friend's wife, he must wink at it, or palliate the

deed ; if, as in the instance of the late Duke of Cumberland and Sir Henry Halford, he should cut his valet's throat, the physician must deny it, or swear that it was an act of the valet's own. There is no act of enormity which, in so far as royalty is concerned, he is not expected either to defend or commit ; and if his spirit or his integrity revolt from either, he is a marked man. He is declared seditious, and only fit to herd with the rabble. Henceforth, whatever be his abilities, he is doomed to a life of poverty, obscurity and neglect. Like the eloquent Gale Jones, he must then either sink into some hole and die ; or, if he resist, the court and the government will unite to hunt and put him down with the ferocity of a bloodhound and the strength of a tiger.

Fergusson, doubtless, reflected all these things in his mind. He had seen Carpue neglected and Wardrop crushed, solely because the former maintained the dignity and independence of a man, and the other refused to make himself the unhesitating tool of a court. He had on the other hand beheld Halford and Cooper descend in wealth, and seemingly in honor, to the grave, for placing their souls and consciences at the court's disposal, while Abernethy was insulted for his independence, and Chambers ruined merely because he refused to swear away a lady's honor. He saw, on the contrary, Brodie flourishing by maintaining a sort of see saw policy between the two—professedly a liberal, and in reality a despot. It is not, therefore, a matter of surprise that, with a family and a fortune before him, he chose the beaten track ; and it redounds to his credit that he did not even make a profession of liberalism. He consequently espoused Toryism as he had gulped the Thirty-Nine Articles, and we must not judge him by a standard too severe if he gulps the court, the government, and the whole of their enormities too.

Unlike many sham liberals, however, Mr. Fergusson is in reality a liberal man. There is nothing haughty in his address ; there is nothing dictatorial in his diction. He is frank and free in his manner, and neither assuming nor insulting in his deportment. Unlike the late Sir Astley Cooper, or the present Sir Joseph Green, he does not swagger into the hospital wards as if he were monarch of all he surveyed ; nor does he, like

the existing Sir Benjamin Brodie and Mr. Robert Keate, view the students with supercilious disdain. He is consequently a favorite with them, and with his patients too. It is wise and politic for a medical man to affect a little sympathy even if he does not feel it; but in Fergusson's instance we believe the feeling is neither assumed nor insincere.

King's College, London, at the time he joined it, was at the lowest ebb in point of reputation, utility, and public respect. It had acquired such a character for narrow bigotry and monkish intolerance, that no man of any ability would join it, or if he did join it, his influence was immediately and irredeemably lost. Mr. Thomas Bell, with a high name in science, in vain endeavored to lecture in it on Natural History; the reputation of his sarcastic namesake, Sir Charles, and of the still wittier John, would have been equally futile. In the nineteenth century its self-elected managers and proprietors—consisting chiefly of the higher and more intolerant dignitaries of the Church of England—attempted to revive all the clerical assumption and popular debasement of the ninth. Green had previously rendered the chair of Surgery ridiculous by his “flowery” eloquence, as his friends termed it, while admitting that his tropes were wholly misplaced, or “floury,” as others represented it, in consequence of his being a baker's son. Arnott, the uncouth, and Frankenstein-looking ogre to whom we have already alluded, had subsequently either frightened the students away by his aspect, or disgusted them by his drivelling. It is, therefore, no small merit to Mr. Fergusson to say, that he has not only maintained, but in some degree enhanced the reputation of the school. Though not a brilliant lecturer, but on the contrary, tedious, uninteresting and prosy, he has raised the class to a respectable body in number. We believe he has now as many as seventy or eighty pupils; and though his lectures may be tiresome, or at all events not so attractive as others, his students derive much advantage from his painstaking disposition and abilities as an operator in the adjacent hospital. In the present state of medical science, however, in London, we do not know any man who is his superior even as a lecturer. Under the base example set by its heads, the profession has become so low, that no man of ability

or independence will condescend to join it ; or, if it has been his misfortune to become enrolled in its ranks, to remain in a position utterly inconsistent with all ideas of propriety or manly dignity. Wealth is yet there to be obtained, and "honors" or titles will flow ; but such wealth, as in the instance of Sir Richard Croft, is often purchased at the expense of all peace of mind, and such "honors" have long ceased to be honorable. We shall, therefore, in no degree regret that Mr. Fergusson, while he acquires the one, escapes the other—or that he survives the base line of princes from whom such degrading distinctions spring.

As a lecturer we have already said sufficient of Mr. Fergusson. As an operator he is able, but not unrivalled. We attach, however, but little importance to this distinction ; for, in Europe, the days of what is termed "slashing" surgery are disappearing, and a mere man-cutting butcher, like Liston, would no longer be tolerated. It is well understood that an operative might be selected from the shambles, who, with a few months' training, could be made to eclipse any of this merely maiming order, and more credit is deservedly attached to the man who patiently saves a limb than to the one who dexterously removes it. Fergusson, in a great measure, belongs to this new school, of which Brodie may, in some degree, be considered the founder. He does not shrink from operations, like some of its members ; nor does he perform them with the want of skill and dexterity evinced by his prototype. On the contrary, he resorts to them boldly when requisite, and invariably performs them with ability and address. He is the nearest approach which England has had to the great surgeon of the Hotel Dieu, Rioux ; and it is no small compliment to Mr. Fergusson to add, that in point of operative and administrative ability, he is second only to that illustrious man—though yet a long way behind him. There is a care, a finish, and an address in French surgery, which the English have never yet been able to attain, except, perhaps, in the instance of Sir Astley Cooper, and even in him the effect was marred by the vulgar ostentation of a showman and the calculating disposition of a shopkeeper. From faults of this description Mr. Fergusson is wholly free. He invariably conducts himself with the tranquility and unobtrusiveness of a

gentleman, and, though not ignorant of the value of money, has never exhibited a mercenary disposition. We have known an instance in which he attended a wealthy merchant for six months, and submitted to be cheated out of his fee; whereas Cooper, when offered a sovereign (about \$5) in his age, was wont to exclaim: "No, no, I must have the shilling too," and a guinea having been the sum he was accustomed to receive for consultation in his prime, he would grumble most ludicrously unless the additional twenty-five cents were paid him.

Mr. Fergusson, to a small extent, is an author. Fortunately for himself, or rather for the undertaking, he was selected to compile a hand-book on surgery by one Churchill, who, having emerged from a debtor's jail, in consequence of his marriage with a candle-maker's daughter, and been thus enabled to start as a medical publisher, was in the habit of throwing a certain number of subjects into one hat, while he put the names of medical men into another, and drew forth both at random. The most incongruous selections thus were made, as in the instance of Jones, the poor believer in witchcraft, being selected to write a work upon the eye, and of Nasmyth, a *ci-devant* paper-maker, being chosen to write a work upon teeth. The nominees, of course, had to resort either to mere compilation or to wholesale appropriation from their neighbors. But in the case of Fergusson a more auspicious choice was made. It was of course impossible for him to add much novelty to a subject so hacknied as the practice of surgery—a subject on which every year in England has its writer, and every one of these writers so ephemerally sprout up, and is as speedily, as well as deservedly, forgotten. These works, in fact, are generally mere advertisements, and are intended solely for the benefit of those who entertain scruples about resorting to the puff direct. Most of them are not written by these nominal writers at all, but are generally the ill-paid productions of some literary drudge. But in the case of Fergusson it was otherwise; and he produced a really able and comprehensive manual on the science and practice of surgery.

In person, Mr. Fergusson is a tall and handsome man, about six feet high. His forehead is not lofty, but, being bald, he has an intellectual appearance. He has a clear frank eye; and,

rejoicing in a true John Bull shoulder-of-mutton pair of whiskers, he has an aspect engaging as well as jovial. His features are well formed; his address is simple, but manly and attractive. He has none of the hollow airs of the courtier yet about him—the ostentatious parade of Cooper, or the refined subtlety of Brodie. He has not, perhaps, the mental abilities of either; but on the whole we are disposed to prefer him, and to think that he is a better man. His disposition is good; he is free from sham, and he is free from sophistry. Whatever be his opinion, it is expressed with sincerity. He will never soar out of the beaten tracks of the profession, nor make perhaps any brilliant discoveries; but, take him all in all, he is qualified to become an ornament to the Court of her remarkably Gracious Majesty Queen Victoria, so soon as he gets there.

Practical Lectures on "Military Surgery." Delivered at the New York Medical College, East Thirteenth street, by ISIDOR GLÜCK, M.D., Chief Surgeon to the Hungarian (Vilmos) Husars, and to various Hospitals during the late war in Hungary. Cor. Fellow Med. Soc. of London, etc.

The Conservative treatment of Fractures.

GENTLEMEN: Having mentioned the accidents and injuries the soldier is liable to meet with during war, as also during peace, while discharging his duties, either from inadvertence of his own or that of his comrades, having further explained the manner in which such accidents commonly happen in soldier's life, I dwelt somewhat longer on the nature, effect and treatment of *such* injuries as are likely to occur, and are *more* common in regular war or in a revolution. I treated of burns and scalds, dislocations, wounds in general, and especially of pointed, incised, lacerated and contused ones, while I mentioned only incidentally gunshot wounds, which deserve especial attention, and will therefore be separately treated of. I have confined myself to the application of such apparatus and bandages (in dislocations) as are the most practical and easy

of execution, and answering, at the same time, the purpose, be they suggested by modern improvements or of ancient date. I have subsequently explained to you in what manner fractures are occurring, as produced by the different weapons, or from a fall from or kick of a horse, or under other various circumstances, while the soldier endeavors to fulfil his duties by running, jumping, etc., etc. I made you acquainted with the nature of fractures, their symptoms and effect. I shall now proceed in explaining the surgical and medical treatment of fractures, and will also show you the manipulation necessary for preparing and applying the simplest and most effectual dressings and bandages, as applicable on the battle-field, or in the hospital.

The local treatment of fractures consists :

I. In approximation of the fractured ends, and II. in mutual retention, which is effected by a bandage, that should be reliable, simple, and in military service, easily and quickly applicable, and also cheap.

In every fracture of bones, it is necessary to watch the complications more or less associated with it.

I. The approximation of the broken ends is in general more or less easy. A permanent extension of the limb in a certain direction is required, and the adaptation of the broken ends should be made by hands.

Sometimes, however, difficulties arise therein.

1. If, for instance, in an oblique fracture, one end of the fractured bone is firmly and deeply fixed in the other end, as in fracture of the neck of the thigh and shoulder.

2. If one end protrudes through the wound in the skin, and is fixed in it as in compound fractures.

3. If the muscles surrounding the broken ends are seized with cramp.

4. If a fragment of a bone is very short and moveable, situated deep and cannot be fixed by the hand, as in fractures in the vicinity of joints in the patella and collar bone.

II. In order to retain the broken ends approximated, it is required instead of the hand to use an apparatus acting similarly ; after having

1. Learnt as near as possible the direction of the fracture to

give to the limb the position calculated best, to approximate and retain both fractured ends.

2. The contraction of the muscles surrounding the broken bone must be counteracted by *methodic pressure*.

3. The mobility and displacement of the broken ends brought near each other, must be prevented by the application of a *bandage*.

III. Amongst the complications associated with fracture, are :

1. Extravasations of blood and vesications, containing a serous yellowish and dark-brown fluid.

2. Acute or erysipelatous œdema, with tendency to an acute purulent one.

3. Stretching of the skin by the broken ends *with* or *without* a dislocation, as for instance, in oblique fractures of the tibia.

4. Division of continuity of the soft parts surrounding the bone together with access of atmospheric air, rents in the skin, excoriations, wounds, ruptures of the muscles, of tendons, ligaments, dislocation, protrusion of the broken ends outwards, incarceration of the latter, rupture of blood-vessels, &c.

Usually a fracture is called a compound one, if the appearances above (4) enumerated are present. The skin, however, ulcerates easily also by complication of the symptoms enumerated under the numbers 1, 2, 3. The bones become bare of skin, and the simple fracture turns to a compound one. In order to be able to follow the course of all those complications, the region of the fracture must always be easy of access. Every swelling of the soft parts was hitherto considered a contraindication for the application of a bandage that prevents the access to it. But *now* experience has sufficiently taught and established the fact, that a bandage producing a *methodic pressure* not only decreases the swelling, but also prevents its increase. For that reason the *methodic pressure* may also be applied advantageously in fractures, where extravasations under the skin and between the muscles, or hæmorrhages in the joints, have taken place, if only the skin is not very tense—if there are no vesications, or excoriations with a tendency to an acute purulent œdema.

But if with a fracture those complications are met, or if a

wound exists, or the skin is broken if splinters of bones protrude—then the region of the fracture should not be covered entirely with a bandage, in order to permit watching of the complication. On the other hand, it is absolutely necessary even in those cases to approximate the ends of the divided bone, and to retain them *immoveable*. If this is not accomplished, the splinters and broken ends come out of place, and by the contraction of the muscles constantly moved, they produce ulcerations of the soft parts, encourage suppuration, and thus impede the curative process in its progress. It is, therefore, obvious that in the treatment of simple fractures that bandage deserves preference that keeps the ends of the broken bone in mutual *immoveable* approximation.

I.—*Starch, Dextrin, Wadding, Plaster, Gypsum, and Gutta Percha Bandages.*

Without entering into the proceeding used by the Chiloe Indians, namely, that of surrounding fractures and wounds by hemp, or that of the Arabian, who buried his fractured leg in fresh soil, and there expected the recovery; and without stopping to dwell on the case of the carpenter, who having cut deep his thumb, quickly covered his wound with blotting paper, and applied small chips as splints, pasting over the whole with thick glue, and then continued his work—I will draw your attention to the development which the hardened and surrounding bandages, with or without wadding, have attained, and as now in practice on the battle-field as well as in military hospitals. The practicability of introducing them in civil hospitals also is evident from the fact that in many, similar bandages have been used with the greatest advantage.

When treating of dislocations, their reduction, and the mode of retention of the replaced bones, I have shown you the manipulation of preparing and applying the starch and dextrin bandages, reverting also to the gutta percha bandages. To avoid repetitions, I will now, in the treatment of fractures by means of bandages, merely allude to them, while I intend to make you acquainted with one sort of bandages lately used in the field, as well as in the hospitals to the greatest extent, and with the most favorable result. These are:

Gypsum or Stucco Bandages.

Although even in compound fractures, where the wounded place has to be left uncovered, the application of Seutin's starch bandage answers this purpose best, still there are some objections to its being used in the field, or even in the hospital.

1. *It dries too slowly*, and cannot replace therefore *immediately* manual extension, what is required in order to retain the ends of the broken bone in mutual contact. It is, therefore, necessary to use machines or apparatus till the bandage becomes dry for 24-48 hours.

2. The *thickness* of the walls of the bandage *diminishes*, while the bandage becomes dry, and thus receding somewhat from the limb, cannot serve instead of the *manual extension*.

3. The application of the starch bandage costs on the field much time and trouble. The limb must first of all be surrounded by a roller, then covered with compresses, and rollers, pasteboard and splints are then applied, and the whole again surrounded by a roller. The application of openings (windows) in Seutin's bandage is combined with difficulties. If the windows are made at the time when the bandage is applied, the same keeps *badly* together the fractured ends and wood or tin splints must be used—if the windows have to be made when the bandage is *dry*, the wounded portion remains covered for a day or longer, and the excision or formation of the openings is in the hardened starch bandage yet more troublesome.

4. However dexterously we may apply the bandage, it will be pretty difficult to make so large openings as required, in order to expose the injured portion without loosening at the same time the *whole bandage*, while small openings or windows expose but a portion of the injured part.

5. In suppurating wounds, the pus discharged, as well as the fluid applied for cleansing the wound, and the moisture of the cataplasms will run under the bandage and destroy the epidermis.

6. The hardening and unequally contracting starch bandage, (i. e. quickly hardening at its thin portions, and slower in its thicker ones) ; exerts an unequal pressure and therefore an injurious effect on the *swollen parts*.

7. The starch bandage cannot be applied for transporting the wounded soldier, who receives on the battle-field a compound fracture, because it requires warm water, (not always ready in the field) for preparing it ; then again it dries slowly, the formation of windows causes loss of time and trouble, requiring the application of splints, and because the parts being covered for a day or two, are injured as suppuration may follow, and the pus stagnates and runs into the bandage ; in damp weather it becomes *moist* and *soft* in the rain ; it is, therefore, necessary to have ready-made *capsules* of starch bandage, and the so-called *moro-amorible* bandage, which often do not appose sufficiently, and cannot therefore replace manual extension.

Recently gypsum bandages have been suggested in Belgium, but their application, according to Dr. Mathieson and Van De Loo, is troublesome, and takes much time, so precious on the battle-field. This bandage is not lasting, its preparation and preservation still more difficult than that of Sentin's starch bandage, much more preferable and practical is the preparation and application of *gypsum bandages*, as made by Pirogoff,* and used by him to the greatest extent with the best results.

The gypsum bandage is *on the battle-field* in many respects preferable to the starch bandage.

The gypsum solution requires but *cold* water, and turns *hard* as soon as applied, and replaces therefore *immediately* manual extension, and neither machines nor apparatus are required for that purpose. The dry gypsum bandage becomes so hard, that *no* splints are required, even if large windows are made, and transporting of the wounded soldier is *immediately* after the application of the bandage possible without injury.

The gypsum bandage is *simple* and *cheap*, as it consists of old *coarse linen* and *gypsum* ; its application is simple and quickly made. The gypsum bandage replaces manual extension *perfectly*, the assistants need only for *a few minutes* keep the limb extended after the bandage has been applied, then the gypsum bandage is *stiff* and *hard* enough to retain the ends of the broken bone in the position given to them. Their displacement is *impossible* as long as the swelling does not diminish, and a *considerable* interspace is not formed between the limb

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and the bandage. Thus the gypsum bandage renders superfluous all machines for extension, as required, while the *starch bandage* becomes *dry*. Only by the application of the gypsum bandage in *oblique* fractures of the *thigh* it is necessary to fix the pelvis, and to retain the limb extended by means of a *bed-table*, and by weights attached to the extremity.

More apparent yet are the advantages of the gypsum bandage in oblique fractures, where the ends of the broken bone are *distant* from each other, in compound fractures and generally everywhere where it is necessary to keep open a wounded spot.

In Pirogoff's mode of applying the gypsum bandage, the openings (windows) may be made *at once*, through them it is possible to view the position of the broken ends, the excoriations and wounds, and the curative process may be watched in its course.

The gypsum bandage does not contract like the starch bandage, interspaces form *slower* between it and the leg, as in the gypsum bandage the interspaces depend upon the *decrease* only of the swelling, and not like in starch bandages also, from unequal hardening of the bandage, and then again it does not become moist and soft in rainy weather.

In complicated fractures the pus may be discharged, and find exit through the large windows made, and does not burrow itself *under* the bandage as is common in the *starch* one.

Wet dressings may be applied *immediately* on the wound itself. The gypsum bandage becomes hard immediately after having been applied; wounded soldiers may therefore be safely transported *immediately* after application of the gypsum bandage, from one place to another, even in the rain, without the bandage being disturbed, although the gypsum bandage may appear *wet* externally, which sometimes lasts for a few hours.

The gypsum bandage may therefore be cut through immediately after the application in the interspace of the splints, if that should be required, in consequence of too great a pressure or pains, &c.

In the battle-field as well as in the hospitals, for transportation of the wounded soldier in the treatment of complicated fractures, with great dislocation of the ends of the fractured

bones, the gypsum bandage is preferable *to every other* kind of bandages.

Requisites necessary for the application of Gypsum Bandages in the battle-field as well as in the hospitals.

1. Long, old hospital stockings made of linen, cut in front along the seam, (if the seam is behind the stocking it must be turned and cut); old drawers also cut along the seam, and divided for one or the other limb; sleeves of old shirts, (or instead of those long linen flaps cut in the form of stockings); drawers or sleeves); jackets or old vests, abdominal bandages covering the body once and half; for fractures of the bones of the rump, pelvis, and of the neck of the thigh and bone.

These pieces of linen used for surrounding the limb must be *equal, soft and dense*. All seams must be removed.

2. *Cotton* or cleaned soft *flax, pads* filled with soft material, lint or flax for filling up, (for instance, around the trochanters, around the malleoli in the popliteal region, and around the achilles tendons) simple and graduated compresses.

3. *Splints* of different dimensions in regard of length, width and thickness, made of old coarse *sack linen*, as used for instance in hospitals for mattresses or straw mattresses.

The old sack linen is folded twice, trice or four times, to the width of two fingers to one-third of a yard. The splints must in fractures of the leg, the upper and forearm exceed at least one-third of a yard the fractured bone, and in fractures of the *thigh*, and that of the neck of thigh it must be one-third of a yard longer than the *whole* extremity.

4. Strips (compresses) of the same linen from 2 inches wide, and of such a length as to surround the limb once or twice, they are calculated to fasten the splints, and are called *transversal stripes* (Pirogoff). These transversal stripes may be made also of fine linen, if the bandage should be a light one.

5. Plaster of Paris (gypsum) in form of fine powder and well dried. For the application of a bandage, never less than 2 lb. have to be used (as for fracture of the forearm,) nor more than 7 lb., as for fracture of the neck of the thigh bone.

6. A vessel with cold water. The gypsum solution should not harden sooner than in five or eight minutes, in order to allow the application of the bandage. Although hardened, it still looks wet from the evaporation of the water, out of the bandage painted over with gypsum solution, and the patient may safely be carried with it.

7. *Large brushes* as used by house painters.

Besides those necessary requisites in hospitals, may be used finer linen rollers for simple fractures and splints made out of pasteboard, and for complicated fractures, with large wounds, *splints of wood*, of different dimensions, together with pads attached to them on both ends, and also a few pieces of sheet iron or tin may be held ready.

II.—*The Application of Gypsum Bandages,*

Is made in the following way :

The injured limb is first surrounded with dry linen, a sleeve, a linen stocking, or with half a drawer.

Bony prominences must be wadded, and hollows filled out with cotton. The linen surrounding it must not be too thin, nor have holes in it, in which case the linen must be doubled, or the limb first covered by cotton. If this is not done the moisture presses to the skin, and the patient complains of a cold or burning sensation.

2. The broken limb is put in the required position, the extension is then made, and the fractured ends then approximated. Sometimes it is necessary to begin with the reduction, and subsequently follows the surrounding of the limb.

3. The splints and the transverse strips of sack linen, each three or four times folded, are put near the patient *in that* order as required to be later applied to the limb.

An assistant prepares the solution of gypsum and paints with it the splints and strips, or rather dips them into the solution and brushes them with it.

The proper application of the bandage depends now upon the gypsum solution. If the solution be too *thick* it dries *quick*, the splints and transverse strips are not *united* firmly together: nor are the splints firmly fixed if the solution be too thin. When the solution becomes denser, water must not be added to

it, as the solution becomes through it creamy, is not imbibed by the linen, cannot be smoothed, does not adhere, and takes a long time to become dry.

5. The splints and strips of linen must be dipped in the solution, which I now prepare by adding to two pounds of water the equal weight of gypsum. They must be extended and swinging free, and must thus be brushed over on both sides with the gypsum solution as you see it here.

6. The splints must be applied longitudinally to the limb, and must be fixed by the transverse strips, carried around both the limb and splint. The transverse strips are applied in pairs, so that the one should cover the other partially.

The splints may be applied in such a manner that the one should cover the other partially, or, what is preferable, in such a way that between the splints should remain a free open space *on the side in front of, or behind* of the limb. The assistants producing extension must continue to do so until the bandage is *hardened*, i. e., about eight minutes after the gypsum bandage has been applied. During its application the limb must be kept extended free, in order to be accessible from all sides. The splints must be pressed firmly to the limb by the hand. The *transverse* strips must be drawn firmly and tightened around the limb, and by the hand or brush well covered with gypsum solution, in order that all prominences and hollows should be equalized. In oblique fractures and dislocations of the fractured ends, at least two layers of transverse strips are necessary. But if the bandage has yet to be removed, it is necessary—

1st. To apply the splints so as to leave a space between them.

2d. The transverse strips are covered from the middle (where about the extent of two inches remains uncovered) towards their ends with gypsum solution.

3d. The transverse strips are applied so that the uncovered part should correspond in its situation to the longitudinal interspace between the splints.

In the field it is necessary to have arranged, before the application of a bandage, all requisites in one package for each fracture separate. Thus, for fracture of the forearm, the band-

ages should be separate from those for fracture of the leg, as you see it here.

Fracture of the Forearm.

The carpal bones, the radial margin, and that of the ulna are like the palmar surface of the hand, covered, as you see, with wadding. The whole forearm I now cover with a shirt sleeve cut open, and make some incisions in it, in order to be able to apply the sleeve smoother. The forearm must be bent in the cubitus. The extension must thus be made on the hand, and the counter extension on the under end of the shoulder. The radial margin must look upwards, the ulnar one downwards. The hand must, according to the direction of the broken ends be abducted inwards or outwards. The palmar and dorsal side of the forearm must be covered with graduated compresses. On these the gypsum splints are applied, and with two layers of transverse strips about six inches wide fastened and extending from the condyles of the upper arm, as you see here, to the fingers. Sometimes the hand must be fixed at an obtuse angle with the forearm, in order to facilitate the adaptation and union in oblique fractures.

Fracture of the Olecranon.

The forearm must be completely extended, if the fractured upper end is drawn high upwards, or else the forearm must be a little bent. The upper fragment must be pushed down by means of the fingers, and approximated to the lower end. Wadding should be placed around the upper fragment and the elbow. The *whole arm* is then placed in a cut sleeve of a shirt. A circular compress must be applied above the upper broken end, which thus will be pushed downwards.

A gypsum splint is placed on the back part of the upper arm. It must be a hand wide, and long enough to reach from the shoulder joint to the upper broken end. Another gypsum splint, of the length of the *whole arm*, is applied to the inner side. Five or six *transverse strips*, five or six inches wide, fix the splints to the upper arm, elbow joint, and the forearm. As you see the application of the bandage takes but little time.

Fracture of the Condyles of the Lower End of the Humerus.

The arm must be bent at the elbow, the fractured ends approached to each other by pressure on the olecranon, exerted from *behind* and sideways (internally and externally), on the condyles. The extension should be made on the upper part of the forearm, while bent. The whole upper extremity is placed in a sleeve ; its condyles, olecranon, and elbow, are surrounded with wadding. A circular longuette is applied around the elbow joint. One gypsum splint is applied to the back of the limb, as wide as the hand is long ; another similar splint on its inner side. Transverse incisions must be made on both sides of the splints, in the region of the elbow joint, in order to fix them easier and smoother. Five *transverse strips*, in double layers, of the same width and length as in fracture of the olecranon are then applied.

Fracture in the Middle of the Humerus.

The arm must be bent in the elbow, and extension made in the upper third of the forearm. The same bandage applied as in fractures of the lower third. If the fractured ends are much dislocated, the extremity must be fastened to the trunk as in fractures of the neck of the upper arm.

Fracture of the Neck of the Humerus.

The trunk is surrounded by a corset or linen cut in the same way, or the patient is dressed in a linen jacket, with sleeves cut open, or with a vest, &c. A conical pad is placed in the axilla. The injured limb must be abducted from the trunk at an acute angle and surrounded with a cut-open sleeve. The armpit, condyles, and elbow joint are protected with wadding. A strong compress is applied *between the shoulder blades*. An assistant fixes with his hands the trunk and the shoulder blade of the injured side. Another one *bends* the forearm in the elbow joint, and extends the upper arm in its lower third. The surgeon grasps with both hands the *head* of the shoulder, and crowds out the fractured end of the axilla. A long gypsum splint, bent at a right angle, and hand-wide, is placed along the back of the limb, from the acromion to the hand ; another

splint is applied to the front of the limb, reaching from the armpit also to the hand.

Incisions must be made on both margins of the splints, in the region of the shoulder and elbow joints, in order to facilitate their adaptation. The splints must be pressed on the limb and surrounded by five transverse strips in single layers. The limb is then brought near the trunk and fastened to it by means of a strip eight or ten inches wide. This broad strip is covered with narrower strips, three or four inches broad, as in the third bandage of Dessault for the fracture of the collar bone.

If the broken ends are not much dislocated, a single splint in front, or one behind, fixed to the limb, brought near the trunk by transverse strips, is entirely sufficient. I require for the application of this bandage the kind assistance of Drs. P. and D., besides that of Dr. H.; it is, however, not necessary that the assistants should be medical men, and soldiers may do you the same service, although perhaps not so adroitly as our friends here did it.

Fracture of the Clavicle and of the Acromion.

The trunk and the limb are enclosed, as in fractures of the neck of the shoulder, in a jacket, vest, etc. In the axilla is placed a conical pad, with the obtuse angle upwards. Between the shoulder blades a strong compress. The fracture is reduced by drawing backwards both shoulder blades, and carrying the shoulder backwards, and pushing the elbow from below upwards. In this position, the arm being bent at the elbow, is fixed to the trunk, by a broad transverse strip of gypsum bandage. On the fracture is placed a long graduated compress. The whole together is then fastened by Dessault's third (triangular) bandage, made of two or three long transverse strips (three yards long and four fingers wide).

Fracture of the Ribs and of the Body of the Shoulder Blade.

The rump is enveloped, as in fractures of the clavicle. Between the shoulders a strong graduated compress is placed, and in the axilla wadding. A broad strip around the rump, from the axilla to the lower false ribs, half a yard broad.

Above the clavicles, two strips, painted with gypsum solution and fastened to the transverse belt. Over it another strip, half as narrow and twice as long as the first ones, twice around the trunk.

In fracture of one of the first three upper ribs, some strips are carried over both clavicles in the form of a cross. In all this kind of fractures the bandage is applied in the sitting posture.

In the preparation of splints for fractures of the upper extremities, the coarse sack linen is doubled or taken three-fold.

Fracture of the Leg (Tibia and Fibula).

The leg and the foot is enveloped in a stocking cut open along the seam. The *heel* is put in the stocking cut out, and remains uncovered. Around the malleoli, on the dorsum of the tibia, on the hamstrings, in the popliteal space, and on the kneecap, as well as on the dorsal side of the foot, wadding is placed.

With considerable displacement, the extension is made by half flexion of the knee joint, otherwise with extension of the knee. A splint one-eighth of a yard wide, and reaching from the knee to the *heel*, is placed on the back of the limb. Two other splints, three fingers wide, extending from the patella to the toe, are put on both sides of the leg. Both splints are fixed firmly to the leg, and after having been incised in the neighborhood of the ankle, they must be covered with four or five transverse strips. These transverse strips are one-third of a yard wide and applied in double layers. The front splint must be fastened to the back of the foot by two other small transverse strips. The *heel* remains uncovered.

If the broken ends are distant from each other, as often happens in fractures of the leg, it is necessary, in order to accomplish the reduction, to lift the heel, to be able to approximate the lower fragment to the upper fractured surface, or the foot must be bent much inwards, and retained in this position by assistants, until the bandage is hardened; if the skin is irritated by a fragment, or threatened to be pierced, the application of openings (windows) is necessary, in order to be able to examine at will the injured spot..

Transverse Fracture of the Patella.

The application of the bandage must be made in the half-sitting position of the patient. The knee must be stretched, the injured limb lifted, and the thigh-bone bent in the hip-joint under an acute angle.

The whole limb is now enveloped in an old half of a drawer. Wadding must be placed in the regions mentioned at the front of the leg. The upper fragment of the knee-cap must be approximated to the lower one, with the hands as much as possible, and retained in this position by the hands by graduated compresses and (circle tours) rollers. On these are applied in the bend of the knee, two or three layers of transverse strips (three fingers wide) in figure 8 turns.

On the back of the limb is also placed a splint five inches wide, reaching from the tuberositas ischii to the heel, it must be fastened with transverse strips to the leg, knee and thigh.

Fracture of the Lower End of the Thigh.

Extension while laying on the back. An assistant fixes the pelvis, another one stretches the knee, seizes the foot in the vicinity of the malleoli and extends it. The reduction is effected by seizing with both hands the broken ends, together with the soft parts. The whole limb must be enveloped, as in the treatment of the fracture of the knee-cap.

One long splint (6 inches wide) is placed on the back of the whole extremity, from the tuberositas ischii, extending to the heel; another equally wide splint is put on the front from the groin, extending to the toes. Both are fixed by five or six transverse strips (five inches wide) in two layers. The lower end of the front splint must also be fastened by two or three narrow strips, carried around the back of the foot in eight tours, leaving the heel uncovered.

Fractures of the Upper and Middle Third of the Thigh Bone and of the Pelvis.

Extension while the patient is laid horizontally. The pelvis must be fixed firmly by a strong assistant pressing the hip bones to a mattress. The assistant must take care that the

crista ilii be laid equally high on both sides. The whole lower extremity of the injured side, and the whole pelvis must be enveloped in a divided drawers, cut open along the seam.

The whole pelvis must then be surrounded by *wide* bandages, covering the erista of the hip bones and the large trochanters. Wadding or hemp must be placed on the malleoli, the back of the foot, around the knee-joint, on the spina cruralis, in the inguinal region, around the trochanter major and the perineum.

The extension is made by lifting up the extremity, bent at the knee-joint, and grasping the foot, as is usually done taking in off another person's boots.

A gypsum bandage, the middle and lower part about six inches wide, on the upper, however, somewhat more than seven inches, is placed on the outer side of the extremity, it reaches from the crista ilii to the sole. In different regions, as opposite the inguinal on the knee and foot-joint, it must be incised. A second splint of the same width, reaching from the perineum to the sole, is applied to the inner side. In the groin and on the back of the foot, the splints must not only *touch* each other at their margins, but also overlap somewhat. The upper ends of the outer and inner splints are fastened to the pelvis by broad transverse strips, which surround the pelvis, once and a half ways, to the extent of four fingers, in two layers, applied like a spica in figure 8 turns. Both splints must be pressed by the hands, and fastened to the thigh and leg by five or six transverse strips of four inches, applied in two layers. The lower end of the splints must be bent *towards* and *to* the foot-sole; strips three fingers wide are fixed to the foot and its back. The heel remains uncovered. The extension of the limb must be continued until the bandage is dry.

If the dislocation of the broken ends is considerable, and the limb much shortened, then instead of a simple bandage, a double transverse strip must be carried around the pelvis in form of 8. In this case it is also necessary that *one* should fix the splints to the pelvis, while *another* presses at the same time the splints to the back of the foot and to the knee. By this proceeding time is gained, and the bandage drying on those parts, quickly acts like an extending machine, preventing the bones slipping over each other, and the pelvis from being displaced.

In fractures of the lower extremity, the coarse sack-linen used for splints must be taken and folded in four, or at least three. Pirogoff's experience is, that in oblique fractures of the upper or middle thirds of the thigh, the bandage cannot be applied so accurately as to answer all desiderata.

The manual extension, the fixing of the pelvis *only* by assistants, the lifting of the patient from the bed, in order to carry around him the bandages, and the application of transverse strips around the pelvis and hip joint, all prevent the accurate application of the bandage.

After the bandage has been applied, it is very difficult to know whether the pelvis is adjusted, and the limb sufficiently extended.

The hands alone of the assistants can neither fix the pelvis, if the fractured ends are displaced, nor perform continued extension.

The application of the bandage (spica) around the pelvis prevents still more the fixation of the pelvis, as well as the extension of the limb. The assistants who have to stand near the patient, prevent the surgeon from executing the necessary manipulations, and superintending the application of the bandage.

In order to obviate all these difficulties, the patient is placed during the application of the gypsum bandage in fractures of the thigh, on a peculiar bench, consisting of three removable pieces, provided with short feet, [bedboard] bettbrett which may be placed on the mattress of a second bed, close to that of the patient, who then is laid on the bedboard, which elevates him half a foot, and better allows the application of the bandage.

To the upper piece calculated for receiving the trunk, both crests of the ilium are fixed by a simple mechanical contrivance. The extension of the limb is produced by weights attached to the stocking.

First the bandage is applied around the pelvis, after having removed the narrow middle piece, corresponding to the pelvis, so that the sacrum lies free. The patient, therefore, is not lifted, and the injured limb does not require to be moved upwards and downwards.

At first two layers of sack linen strips, spread with gypsum solution are placed like a Scultetus bandage on the bed-board, after having put it on a second empty bed, in the vicinity of the patient. The injured extremity must be enveloped, as mentioned, with linen, and surrounded where necessary with wadding, and then the patient is cautiously removed under continual extension from his bed onto the bed-board.

The board being elevated on feet of from 3 to 6 inches, the patient is raised high, and thus the application of the bandage is facilitated to the surgeon and assistants.

The patient lies with the sacrum on the middle board, and the injured limb, from the groin to the foot, rests on the bandage ready made upon the foot-board. The tubera ischii are situated below the prominence (elevation) of the foot-board. The crests of the hip-bones lay between the excavations of the horns. The horns are firmly pressed upon, and fixed to the hip-bone. They are situated exactly between the anterior, superior, spina ilii, and the trochanter major, and can be fixed in every situation by means of the screws.

The middle board is then removed, the sacrum of the patient thus lies free, so as to allow the circular bandage to be carried around it.

Subsequently, a broad band, with a weight, is attached to the foot-joint, and hung over the roller. The bandage is now applied. The middle board is then again pushed in, and the patient remains for some time on the bed-board, until the gypsum bandage is hardened and dry. If the extension should be necessary to be continued, he remains on the bed-board for some time longer.

Treatment of Compound Fractures.

The displacement of the fragments *in fractures* of the bone, is a frequent and very unfavorable accident, which with the degree of complication becomes more dangerous, and its treatment more difficult and tedious.

If a displaced unreduced fractured bone is not consolidated, united by the exudation of callus, the consequence is a *Pseudarthrosis*, which is not easily remedied. But if the fractured bone is firmly united by a callous mass, the displaced broken

ends thus united, cause the limb to appear deformed or shortened, curved, and it may be useless. Although amputation might be justifiable in many similar cases, it nevertheless becomes the imperative duty of the military surgeon, to try the conservative plan of retaining the limb, or some parts of it. The great triumph achieved by modern military and civil surgeons, in retaining what formerly used to be removed by rule, distinguishes modern from ancient surgery, and the experience herein of military as well as of civil surgeons, warrants a trial and imitation of the treatment on conservative principles. I shall for that reason dwell somewhat longer on the means of facilitating the conservation of the endangered parts, and I will consider,

(a) The re-position of the fragments in serious complicated fractures in general, and those with splinters.

(b) The situation of the limb in the extended or bent position, or on swings.

(c) The mode of extension and retention in complicated fractures in general.

(a) *Re-position or Reduction of the Fractured Bones,*

is somewhat tedious to both surgeon and patient—to the former on account of the great displacement, the re-position being impeded by wounds, swelling, and muscular spasm—to the patient on account of the immense pains the re-position causes under similar circumstances. If the bone is, however, *totally* crushed, and the fracture thus a comminuted one, the re-position is more easily accomplished, and it may even happen that if the bone be splintered, no displacement in the longitudinal diameter of the bone occurred, as you will hear when I come to treat of comminuted fractures produced by *gunshot*.

It is necessary to be cautious in manipulations for re-position of so severe fractures, and it is preferable to allow a shortening of the limb for the means of retaining the parts thus displaced are utterly inapplicable on account of their positively injurious effect. By forcible traction, tension or reduction, the irritated parts become still more injured, the sharp ends of the splinters being driven into the soft parts by such a manipulation, and hence hæmorrhages may arise, and also

severe pain. The muscular spasms, which often occur, in splintered fractures of the leg for instance, supervene in the first two or three nights after the reduction, in the form of *sudden, convulsive, painful* contractions of the limb, disturbing and rousing the patient suddenly, displacing by it the reduced splinters so much that a new re-position becomes necessary, frequently the spasms associate with inflammations and are thus still more dangerous.

A slightly bent position of the limb, together with a small dose of opium or *cannabis indica*, or chloroform inhaled, and in the inflammatory stages abstraction of blood, warm water dressings and fomentations, are used under such circumstances often with benefit. *Tetanus*, however, is to be apprehended. The reposition alone is not sufficient to evade those fatal muscular spasms, although the reduction, if successfully accomplished, and the parts if thus retained, may contribute much to the alleviation of the spasm. Reposition should be tried without an apparatus, but the extension should be confided to intelligent assistants.

(b.) *The Situation of the Injured Limb in the Extended or Bent Position, or on Swings.*

The severely injured limb, and the easily displaced splinters, require above all *rest* and the most secure and comfortable position. The situation must be firm, without pressing unequally. The position of the limb must be retained *unchanged* for a longer time. The vulnerable parts have to be protected against *bedsores*. The heel, the malleoli, the tendinous prominences of the heel, and the internal condyles of the shoulder should rest on a ring filled with horse hair, or on Gariel's air cushion, or at least be provided with wadding and protected.

In order to facilitate the movements of the body without disturbing the injured limb, *swings* may be used with great advantage, chiefly in injuries of the leg. The simplest is the best. *Gutta percha* swings may be considered the most suitable, and are constructed in this way: A plate of gutta percha of two millimeters thickness, from fourteen to eighteen inches square, is bent, and by its four corners suspended by

means of bands and hooks on a roller fastened to an iron stand, having a cross bar, which may be fixed higher or lower. The lateral compression exerted by the swing on the limb commends it, together with the advantage of producing by its hardness a gradual and moderate reduction, a lasting mild retention, which serves as a lateral splint. The gutta percha swing being of an indestructible material, resisting the water, pus, use and time (allowing therefore the irrigations with water), remaining always smooth, never breaks, and is therefore preferable to the *wash-linen swings* that last but a short time, to the *leather swings*, that soon offend by their odor, and to the *wooden swings*, which are too heavy. The foot may also be fixed by a *sole-plate* or by bands.

The situation of the limb, bent in the joints, as the lateral one, or on simple or double inclined planes, the angle of which may be variously altered, is proved to be the most comfortable to the patient; the most secure, applicable to all limbs, and most adapted for the spontaneous adaptation and retention of the fragments. The long time required for the union of similar fractures demands the *quiet secure* position of the limb, and this by natural as everybody may convince himself, the *semi-flexion*. After a certain time passive movements should be made with the limb, in order that the joint, thus half bent, should not become stiff, and that in consequence of the unequal extension of the several parts composing the joint, may not become irritated or relaxed.

The situation and apparatus are various for the different limbs. For the upper extremity *straw* cushions are used covered with gutta percha, of paper thickness, on it the arm is laid, *half bent* in the elbow, between pronation and supination, or in one or both directions, according to the injury of the soft parts. If the forearm lays on the front side, a soft *ball* should be placed in the hand, in order to bring the fingers also in the half-bent position. The gutta percha swing may be modified for the arm, and used in injuries of the elbow. A gutta percha plate embraces the arm and is suspended on one of the iron stands. A second gutta percha plate receives the forearm and the hand suspended on a separate stand. Both gutta percha plates are at angle to each other, described by the more

or less bent elbow, and touch each other on the inner concave side of the angle, where they can be fixed to each other by a band or hook. The hiatus thus formed on the outer convex side of the angle, in which the elbow itself lays, may be closed by a small *valve*, to be fixed to the first mentioned two plates of *gutta percha*, which, if dropped, allows access to the wounds, abscesses, bed-sores of the elbow, and the inner condyle and permits, the application of dressing in that place.

For the lower extremity, and especially for the injuries of the thigh, well-cushioned boxes may be used advantageously, the lateral walls of which may be dropped or reverted and its angle varied at will by means of *hinges* and *double screws*. The situation of the limb is by the lateral pressure of the wall a secure one. For the leg Heister's apparatus is the best, it consists of a long box with side walls to be dropped, a foot-board, easily changeable in its situation and angle, and provided with an excision for receiving the heel.

(c.) *The Mode of Extension and Reduction in Complicated Fractures in General—Where and How it is Applicable in the Conservative Method in General and in Particular.*

The displacement of the fragments is influenced not only by casual external circumstances, causing movements of the injured soldier, from the moment of his falling down, and that of the injury, and through the whole time of his being transported, but the displacement also depends upon the *active muscular contractions*. Hitherto all points of the bones irreducible into the soft parts, and therefore prominent, used to be removed by the saw or resected. Jeffrey's chain saw answers this purpose best, after a thin *gutta percha* plate is used for protecting the soft parts during its application and use. Slight bony points may be removed by strong forceps. But Malgaigne proved by his observations how advantageously the prominent bones may be replaced by a permanent depression of them by means of awls, which are screwed into the prominent points from a fixed position, and thus cause them to be imbedded in and united with callus (*appareil a vis*.) By its use from two to four weeks, the callus exudation is firm enough to keep firm the bony fragment.

The extension is best effected by long towels, carried around the body under the armpits, over the head of the bed, and thus producing the *fixation* or counter-extension of the body, while by a well-cushioned leather belt, provided with straps and buckles, or cords with rings moveable in the necessary directions, the extension is made.

Reduction or re-position has sometimes to be left to the force of nature, and is effected by *muscular contraction*. If fractures splintered to a very great extent, are left to spontaneous contraction by the activity of the muscles on the inclined plane, by placing the limb in the most natural direction possible, by an adapted situation and lateral compression the extremity may become shortened or somewhat deformed, but will still be conserved, and its defects may be better remedied.

II. The Gypsum Bandage applied in Complicated Fractures.

In fractures complicated with injuries of the skin, with considerable contusions, vesications, by tendency of the skin to soreness in the region of the injury, and by great displacement of the fractured ends, it is necessary to apply the gypsum bandage with openings, (windows) and to leave the injured portion uncovered. The windows of different sizes are made during application of the bandage, and may be formed in two ways.

1. Leaving interspaces between the splints and the transverse strips, to be fixed in the region corresponding to the injury, or

2. By applying on both sides of the limb, or in the front and back of it, wooden splints, provided on both ends with thick pads, and by fastening them by transverse strips.

First method. The limb must be enveloped, (as in simple fractures) in an old sleeve or a stocking, or in divided drawers, only with the difference, that the linen is cut transversely in the region of the fracture, and the flap of it thus produced is not pressed to the limb. The extension and re-position is then effected, and to the limb the necessary situation is given, removing thus the broken ends from the skin threatened to be pierced. The splints must be thicker than in simple fractures, and applied on both sides, and over and under the fractured spot, leaving free the injured portion as well as its

circumference. The splints must closely fit in other parts, and are then fixed by 2 or 3 layers of transverse strips, going once or twice around the limb, *above* and *below* the injured region.

On the fractured spot, or in the region of the sore skin, the transverse strips surround the splints only partly, and opposite to the wounded portion, the ends are carried to the margin of the opening, (window) and then reverted on the limb.

But if only one side has to remain uncovered, a splint may be applied to it in the described manner, and to the other side a gypsum splint.

If in complicated or simple fractures a very firm bandage is required, as for instance in fractures in the neighborhood of joints, by the preparation of the splints, pasteboard, sugar-paper. etc., may be placed in the linen layers after having been painted over on both sides with gypsum solution.

In complicated fractures, where profuse suppuration may be anticipated, the window must be formed so that the pus should not find its way under the bandage. The margins of the window must be sufficiently distant from each other.

The application of Pirogoff's gypsum bandages in simple as well as complicated fractures, is calculated for the battle-field.

In hospitals where more time can be taken and the means allow it, it is preferable to take instead of the sack-linen rollers, linen flaps and cotton or flax. The bandage lays thus firmly and is light. If a roller is applied instead of the transverse strips, the gypsum bandage is fixed in this way :

1. The limb is surrounded by old linen, and on two or three sides provided with splints, leaving an interspace between them.

2. The splints are firmly prepared and fixed to the limb, and then surrounded by circular turns of a roller, in the vicinity of the joints in figure eight turns, (*spica testudo*.)

3. While the roller is carried around the limb, its outer surface is painted over with gypsum solution (by the hand or a brush,) but so as to leave the place corresponding to the interspace free of gypsum. In order to facilitate the cutting open and removal of the bandage, a piece of roller dipped in *oil* should be placed in the interspace of the splints.

If it is necessary to press the splints in the wounded region

still firmer to the limb, they may be fastened by strong thread or by a dry roller carried circularly, (which has to be removed when the bandage gets dry,) or two or three transverse strips three quarters of a yard long, are painted over both sides with gypsum solution, leaving in the middle about an inch free from the gypsum solution. The part free from gypsum is placed over the window in the bandage, and the painted ends are carried around the limb, bringing by it the splints close to the limb. As soon as the bandage is dry and firm, the unpainted part of the strips covering the window is cut through by a pair of scissors.

On the injured portion is placed, through the window, lint dipped in camphor, or fomentations of sugar of lead, etc., or in injuries of the skin with vesications, a solution of nitrate of silver (from two to fifteen grains in one ounce of water) is applied.

Second Method. The limb is surrounded with old linen above and below the fractured portions; the injured part remains uncovered in its whole circumference, or one side only, according to the extent of the place to be left uncovered. Long wooden splints are then applied on both sides or in front, and on the side the splints are provided with thick pads turned towards the limb, and fixed so that the pads, at least six inches wide, should be placed close and firmly to the limb the splints then are fastened to it by transverse strips in the region of the pads. By this proceeding the splints remain distant from the injured place to the extent of the thickness of the pad, therefore nearly six inches. If the injury is considerable or on both sides of the limb, one single splint may also be sufficient. In this case, it is advisable to fix it first by thin English sheet iron, and subsequently with transverse strips. In complicated fractures the gypsum bandage may be applied in the following way :

Having applied the splints so as to leave uncovered the injured part, the same are fixed by a dry roller, which is to be painted while carried around, leaving a part unpainted. On that portion, the dry linen is cut through by scissors; the ends of the strips thus formed are then turned downwards, and by means of the gypsum solution fixed to the sides, in which case

the solution must be prepared with glue in order to harden slowly. Other changes can also be made in the gypsum bandage as applied by Pirogoff: for instance, first a layer of strips immersed in gypsum solution, then splints, and again a second layer of transverse strips to fix the splints. Sometimes the splints are at first fastened by thread and then by transverse strips.

III. The Removal of the Gypsum Bandage from the Limb,

May be effected in two ways :

1. Like the starch bandage, being cut open by Seutin's scissors or a strong scalpel.
2. Removing the transverse strips under continual use of water, in order to precipitate the dust formed by it.

Various Modes of Preparing a Good Gypsum Solution, to Delay its Hardening, and to make the Gypsum Bandage easy and elastic.

The gypsum solution hardens in five or ten minutes, according to the quantity of water used for it. In order to apply properly the gypsum bandage a quarter of an hour is required. In fracture of the neck of the thigh, and in all greater bandages, the lower layer of the strips often hardens, while the upper ones are not yet applied; the lower layer, therefore, does not stick to the upper one, the bandage does not become firm, and breaks easily, it is therefore necessary to delay the hardening of the bandage, which is accomplished by adding *glue* to the gypsum solution. The smallest quantity of dissolved glue delays already two or three times the duration of its becoming hardened. Half a teaspoonful of glue dissolved in hot water, and of the consistency to remain fluid, when cold, added to two pounds of water and two pounds of plaster paris, is sufficient to delay the hardening of it for a quarter of an hour; but the glue must not be mixed with the gypsum solution, but always with the water, previous to adding the plaster of paris to it. If added to the gypsum solution it becomes crumbly. The thicker the glue, the less of it is required for delaying the hardening of the gypsum solution. If too much of it is added, it does not harden for days. The gypsum solution be-

comes firmer through the addition of *glue*, but the surface remains moist for a longer time. Starch and dextrine exert the same influence on the gypsum solution. Thus prepared, no haste is needed; the bandage is cautiously placed under the limb without lifting up the patient; and changes are made on the bandage at pleasure.

In order to prepare a light bandage, it is necessary to take instead of the coarse linen for splints, *thin, not polished pasteboard*; and for transverse strips, *fine* linen left unpainted on one side of the limb, corresponding with the interspace of the splints. In order to leave on the linen unpainted spots, a longitudinal space, finger wide, may be brushed over with fat or a mixture of soap solution and oil. The sack-linen strips are immersed in the gypsum solution, which does not adhere to the spots covered with the above mixture, and may be easily freed from the gypsum solution by the fingers.

The gypsum bandage may be made more *elastic* :

1st. By applying the transverse strips in figure 8 turns in the neighborhood of joints, and at least two layers.

2d. In the bend of the joints, pasteboard or paper immersed in the gypsum solution must be placed between the linen layers.

If the bandage is applied with interspaces between the splints, and if portions of the transverse strips are left free from the solution, it becomes so elastic as to allow the margins of the bandage, when cut open, to recede from each other so far as to permit comfortably taking the thickest out of the bandage limb and returning it again. The same bandage may be applied two or three times, if cut open and provided with new transverse strips.

Instead of the transverse strips, leather *belts* with buckles may also be used, or dry rollers.

The elasticity depends upon the linen.

The more elastic and finer the linen is, the more elastic is also the bandage; therefore old linen answers better this purpose than the coarse sack-linen.

4. It depends upon the manner of conserving the bandages removed from the limb, and the formation of *cases* and straps for the transportation of the wounded from fractures

A bandage removed from the limb breaks into pieces and makes dust, which may be obviated by various means.

The cases (or capsules) made by those means, together with the leather and boxes for the extremities (of various sizes) not only well answer the purpose of transporting the wounded soldier, but have also a good aspect, are light, are not easily soiled, and attract no moisture.

It is required :

To apply the bandage with openings and longitudinal interspaces.

If very light, fine, and elastic bandages should be made, it is necessary to take, instead of the coarse linen for splints, unpolished pasteboard, common paper, or firm, worn hospital linen, and fine linen for the transverse strips.

In order to make the walls of the bandage still thinner and easier, the limb may be placed in a stocking cut open, and over it a layer of Scultet's bandages, *only the outside* is then covered with gypsum solution to which *glue* was added.

On the sides and the back splints, dipped into gypsum solution (of pasteboard, paper, or linen,) are applied. In front a longitudinal interspace is left (finger wide), and the splints are fastened at first only by thread, and subsequently by transverse strips of fine linen, that also has uncovered portions corresponding to the interspaces. When the bandage becomes *entirely dry* on the limb, it is cut open by scissors along the interspace between the splints and all unpainted and oiled linen flaps are removed on the margins thus gained. The *inside* of the capsule is now lined with linen or oiled silk, and cushioned by filling the hollows with wadding, while the outside is painted over with oil or dextrine solved in water. In order that the bandage be externally waterproof and smooth, and have a good appearance, it may be painted over with common paint as used for walls. Such a bandage (capsule) is yet more elastic than a starch bandage, and is very light, a bandage for the leg weighing but two pounds. For complicated fractures, capsules with windows and wooden splints may be prepared in the same way.

Such capsules, made (for the army and hospitals,) of different sizes, are preferable to the starch bandage, being firmer, not so

easily used up, and not ruined by moisture. The capsules may be fixed to the limb with rollers, leather straps and buckles, or with transverse strips.

In order to prepare a good gypsum solution, it is necessary to know :

1st. That equal parts (in weight) of water and gypsum form a mixture that *thickens in three minutes* and becomes *hard in eight*. Linen dipped in such a mixture becomes firm after twelve minutes, although its surface remains moist for seventeen hours longer.

2d. Two pounds of water, with half a teaspoonful of thickly-boiled glue, mixed, and also with two pounds of gypsum, give a mixture thickening in eight minutes, and hardening in twelve minutes. Sack-linen dipped in this mixture becomes firm after half an hour, the surface remaining moist for all the day.

3. Two pounds of water, with half a teaspoonful of glue, and two and a quarter pounds of gypsum mixed, become thick after six minutes, and firm after twelve; sack-linen fourteen minutes.

The thickening of the gypsum solution does not prevent the application of the bandage. If no glue is added, the solution retains its capacity of sticking for five or six minutes longer, and for twelve or seventeen, if glue was mixed with it.

For the preparation of gypsum bandages are required :

				Water. lbs.	Gypsum. lbs.
For fractures of the forearm,	-	-	-	3	3
“ “ upper arm and leg,	-	-	-	4—4½	4—4½
“ “ neck of the humerus, about	-	-	-	6	6
“ “ clavicle and ribs,	-	-	-	4—6	4—6
“ “ thigh,	-	-	-	7	7
“ “ neck of the thigh,	-	-	-	8	8

If common gypsum solution is taken for the bandage, it is better in fractures, the bandaging of which takes more than five minutes, to prepare first only the half of the necessary gypsum solution. But if *glue* is added, the whole quantity may be prepared at once. In order not to lose time in the application of the gypsum bandage in hospitals and on the battlefield, there must be kept in readiness for every kind of fracture a certain quantity of old linen in the form of stockings, sleeves, drawers, then transverse strips and splints of coarse

linen—all these articles must be ready in packages—as you see it here. The manipulation, as you observe, is by such an arrangement facilitated, and much time gained, which on the battle-field is of the greatest consequence.

Bandages for Fractures of the Forearm.

- | | Long. | Wide. |
|---|---------|-------|
| | Inches. | |
| 1. <i>A stocking or half a sleeve.</i> | | |
| 2. <i>Two splints of sack-linen folded twice or thrice,</i> | - | 11 3 |
| 3. <i>Six transverse strips of sack-linen, three in each layer,</i> | | |
| <i>surrounding the limb once and again halfways,</i> | - | 10 3 |

For Fractures of the Humerus.

1. A cut open shirt sleeve.
2. Two side splints.

(a) The external back splint,	20	{	In the lower end near the hand 3 inches; near the shoulder 5 inches.
(b) The internal front splint,	18		
3. Transverse strips, six in each layer :

For the forearm,	-	-	-	9	{	4 inches.
For the humerus and elbow,	-	-	-	12—13		

For Fractures of the Neck of the Humerus.

- | | Yds. | Ins. |
|---|------|------|
| 1. A sleeve and an upper part of a shirt or of a jacket of linen. | | |
| 2. Splints and strips, as in fracture of the upper arm. | | |
| 3. A broad belt for the trunk, | - | 3 7 |
| 4. Three transverse strips, | - | 2½ 3 |

For Fractures of the Thigh.

- | | Inches. |
|---|---------|
| 1. A cut-open stocking. | |
| 2. Two splints of sack-linen, | 18 5 |
| 3. Ten transverse strips, five in each layer : | |
| Below, for the foot joint, | 12 3 |
| Above, near the leg, | 16 |
| 4. One or three transverse strips for the foot, | 10 3 |

For Fractures of the Patella.

- | | Yds. | Ins. |
|---|------|------|
| 1. A divided pair of drawers, the half cut open. | | |
| 2. A splint of sack-linen for the back of the limb, | - | 1¾ 7 |
| 3. Sixteen transverse strips, eight in each layer : | | |
| For the lower part of the leg, | - | 12 4 |
| For the knee, | - | 13 |
| For the thigh, | - | 20 |
| 4. Thick wire for fastening the leg. | | |

For Fractures of the Thigh and its Neck.

	Long. Yds.	Wide. Ins.
1. A divided pair of drawers cut open.		
2. Two splints of sack-linen, three folds thick.		
An outer splint, - - - - -	2	
For the upper part, - - - - -		10
In the middle, - - - - -		7
Below, - - - - -		4
An inner splint, - - - - -	1 $\frac{3}{4}$	
Above, - - - - -		7
Below, - - - - -		4
3. Sixteen or eighteen transverse strips, eight or nine in each layer :		
Below—For the foot joint, - - - - -	Ins. 12	4
For the knee, - - - - -	16	
Thigh and inguinal region, - - - - -	Yds. 1 $\frac{3}{4}$	
4. Two strips for the eight turns on the foot joint, -	1 $\frac{1}{4}$	3
5. Roller for the pelvis, - - - - -	2	6
6. Two or three strips for the pelvis (spica), -	4	4

I have thus, Gentlemen. *practically* demonstrated to you the various manipulations necessary for the application of the different bandages, with their numerous modifications, leaving to your own judgment to choose, when called upon, the most appropriate and suitable one that will be suggested to you by the peculiarity of the injury in the wounded soldier, and by the circumstances of war.

PART II.—REVIEWS AND BIBLIOGRAPHY.

“Nullius addictus jurare in verba magistri.

Memoirs of Daniel Drake, M.D. By E. D. MANSFIELD, Author of
“American Education,” &c.

This volume has just been issued from the press of Messrs. Applegate & Co., Cincinnati, and is a valuable contribution to historic medicine. It is replete with interest, and gives a clearer insight into medical politics of this latitude than any other book extant. Nor is this all. The subject of the “Memoirs,” having by his labors and genius identified himself with all the important social, political and scientific movements of his day, and especially those connected with

and growing out of his profession, the biography of Dr. Daniel Drake, becomes a current history of the times, and a *mirror*, from which features—though occasionally distorted—of the profession of medicine are reflected, from its infancy in the West, up to the present.

By nature he was designed for primitive work, and was endowed with the attributes of a great general, whose will, for the security of the fortress, was necessary to be *universal law*. Insubordination to his wishes and commands, was inconsistent with the harmony of the forces ; and when persisted in, was tantamount to insurrection. He was jealous of his rights, real and imaginary, and resisted, with animosity peculiar to him alone, any encroachments upon them. This will account for the many bitter professional and social controversies which from time to time marred his otherwise brilliant career, and rendered a part of his existence acerbate and less profitable than it otherwise would have been. The latter half of his life he lived in advance of the present age, and his genius then shone without a stain to tarnish its brilliant lustre, while alone upon the stage, he made battle with the *arcana* of nature, and brought back from the contest principles and truths which will survive the “wreck of ages.”

In entering upon the active duties of life, he found the arts and sciences, commerce, social and political economy, in their infancy, and with the hand of a foster-mother, he contributed to their development, and imparted to each the impress of his own inherent greatness. For more than half a century no important movement was permitted to pass uninvestigated ; his time and talents appeared adequate to them all. To him, more than any one citizen, Cincinnati—and perhaps the West, are indebted for the social, scientific and commercial prominence which they now enjoy.

The life and character of Dr. Drake, are just sources of pride and emulation to every intelligent physician of the Mississippi Valley. They illustrate the achievements capable of being accomplished, unassisted by knowledge obtained from schools. To those just entering upon the duties of forming for themselves a character—and especially the physician—his untiring labors should be constantly imitated, and the noble results ever kept in view, as incentives to the great work.

Having his profession determined for him by his father, young Drake received the advantage of an extra “quarter of country schooling,” over his brothers and young associates. When he entered the office of Dr. Goforth, at Cincinnati, as a student of medicine, according to his own account, his stock of book knowledge consisted in

the following inventory, viz. : I had learned to spell all the words in Dilworth, a good portion of those in Noah Webster, jr., whose spelling book then seemed to me a greater marvel than does his quarto dictionary now lying before me. As a reader I was equal to any in what I regarded as the highest perfection, a loud and tuneless voice. In chirography I was *so so* ; in geography, I was obscure ; in history, O— ! In arithmetic, as far as the double rule of three, interest, practice, tare and tret, and even fractions in decimals. My greatest acquirement, that of which I felt rather proud, was some knowledge of surveying, acquired from love—I mean to name my author as well as my taste, but which I have long since forgotten. Of grammar, I knew nothing, and unfortunately, there was no one within my reach who could teach it.

But let no one be deceived, or deluded with the idea, that Dr. Drake remained long in this unfortunate condition. A part of each day was devoted to the cultivation of literary and scientific studies, outside the pale of his profession, and he soon becomes a MASTER, organized a “College of Teachers,” and shines among the literati and savans of his age.

The great want of thorough mental culture, proved almost an insurmountable barrier to his early scientific pursuits ; and notwithstanding he even became familiar with the classics, his defective mental training during his youth was ever deplored by him. Feeling personally the great embarrassments under which young men are placed, when ushered into the profession of medicine with defective preliminary education, he was ever found the firm advocate of thorough mental discipline, and a high order of preliminary acquirements for those who seek the “honors and immunities” of the profession of medicine. If the standard of elementary and professional acquirements, contended for by Dr. Drake, were exacted from those seeking the *doctorate*, with ordinary faithfulness, the profession would soon be divested of ignorant pretenders and bungling physicians.

Fifty-five years ago from the present writing, Daniel Drake commenced the study of his profession, and was the first medical student of which Cincinnati can boast. His first duties were “to read Quincy’s Dispensatory and grind quicksilver into mercurial ointment. This was the beginning of theory and practice at once. The medical books studied were Chesselden on the bones and Jones on the muscles, without specimens of the former or plates of the latter ; and afterwards the humeral pathology of Boerhaave and Vausweiten, with-

out having studied the chemistry of Chaptal, the physiology of Haller or the materia medica of Cullen."

After practising a year with his preceptor,—as is occasionally the custom now-a-days, in 1805 Dr. Drake entered the University of Pennsylvania, at Philadelphia. The faculty was then composed of Rush, Woodhouse, Wistar, Physic, Barton and Dewees. During this course, he took but the tickets of the four former, for lack of funds to meet the current expenses of the winter. They, in the aggregate cost him \$70,00; that of Dr. Physic, being \$10 00; the others \$20 00 each. This, with another significant fact, which occurred eleven years subsequent, demonstrate quite conclusively, that the venerable and distinguished, when composing this faculty, guarded with scrupulous care the portals of the profession. After attending his first course of lectures he returned to Cincinnati, and soon took the lead in the practice of his profession. He applied himself closely to scientific and literary pursuits, and become an author of some distinction. Ten years after his first visit to Philadelphia, he returned to obtain a degree from the University, and at the conclusion of the lectures he found the commencement over, and was, moreover, *threatened* with the loss of his diploma, which had been the great object of his visit to Philadelphia. The faculty, however, granted him a separate "commencement," and he received the first medical degree which was ever conferred upon a citizen of Cincinnati. As he had been the first medical student, so he was now the first graduate of medicine of this new city."

In the Spring of 1816, he recommenced the practice in his native city, continuing to lead the scientific and literary circles of the place. The next year "ushered him into a new, and after a time, the most important public relations of his life. In January of that year he accepted a professorship in the Medical College at Lexington, and soon after commenced his long and distinguished career as a public teacher of medicine. This event he announces to an old and intimate friend with evident satisfaction. "I am now going to astonish you—so cling hold to every support within your reach—*I am a Professor!* Yes, incredible as it may appear, *I* am really and *bona fide* appointed a professor, and I repeat it on this side of the sheet, to save you the trouble of turning back to see if your eyes did not deceive you. I am, let me repeat, unquestionably a professor; but you must not suppose by this that I am a great man. For a professorship, to confer greatness, must be a professorship in a great institution. But this does not happen to be the case in this instance. This was the

commencement of the Transylvania University, the first Medical College West of the Alleghania range of mountains, and owes its origin to the exertions of the immortal Dr. Benjamin W. Dudley ; a man, whose reputation, long since, has become world-wide.

To Dr. Drake, a connection with this Institution was the commencement of a career full of thrilling events, which are recorded in a happy manner by his biographer. "He frequently said in after time, that if there was anything he had a strong taste and peculiar qualification for, *it was that of teaching medicine*. He was ambitious of being a successful and popular teacher ; and in addition to the united testimony of a host of admiring physicians scattered over the South and West, who at some time during their lives were students of his ; the evidence furnished by Dr. Gross, who for many years was associated with him in imparting medical knowledge from the *rostrum*, will demonstrate that in this particular, he beame eminently successfull.*

"It was here, surrounded by his pupils, that he displayed his powers with peculiar force and emphasis. As he spoke to them, from day to day, respecting the great truths of medical doctrine and medical science, he produced an effect upon his disciples such as few are capable of creating. His words dropped hot and burning from his lips, as the lava falls from the burning crater ; enkindling the fire of enthusiasm in his pupils, and carrying them away in total forgetfulness of everything save the all-absorbing topic under discussion. They will never forget the ardor and animation which he infused into his discourses, however dry and uninviting the subject ; how he enchained their attention, and how by his skill and address, he lightened the tedium of the class-room. No teacher ever knew better how to enliven his auditors, at one time with brilliant bursts of eloquence, at another with glowing sallies of wit ; now with a startling pun, and anon with the recital of an apt and amusing anecdote, eliciting, on the one hand, an admiration for his varied intellectual riches, and, on the other, their respect and veneration for his extraordinary abilities as an expounder of the great fundamental principles of medical science. His gestures never graceful, and sometimes eminently awkward, the peculiar incurvation of his body, nay, the very *drawl* in which he gave utterance to his ideas, all denoted the burning fire within, and seemed to impart force and vigor to everything which he uttered from the rostrum. Of all the medical teachers whom I

* Discourse on the life, character, and services of Daniel Drake, M.D., by S D. Gross, Louisville, 1853.

have ever heard, he was the most forcible and eloquent. His voice was remarkably clear and distinct, and so powerful, that when the windows of his lecture-room were open, it could be heard for a great distance. He sometimes read his discourses, but generally he entered the rostrum without note or scrip.

“His earnest manner often reminded me of that of an old and venerable Methodist preacher, whose ministrations I was wont to attend in my early boyhood. In addressing the Throne of Grace, he seemed always wrestling with the Lord for a blessing upon his people, and, in a way so ardent and zealous, as to inspire the idea that he was determined to obtain what he asked. The same kind of fervor was apparent in our friend. In his lectures he seemed always to be wrestling with his subject, viewing it and exhibiting it in every possible aspect and relation, and never stopping until, like an ingenious and dexterous anatomist, he divested it, by means of his mental scalpel, of all extraneous matter, and placed it, nude and life-like, before the minds of his pupils.”

Then as now it was found unprofitable for a physician to leave a lucrative practice for one-fourth of the year, to deliver a course of medical lectures in an institution removed from the theatre of his private professional labors. Satisfied with his own ability to teach, Dr. Drake, at the termination of his first course of lectures, returned to Cincinnati—then numbering 10,000 inhabitants, with the full determination of taking immediately, the initiatory of establishing a medical school in his own city.

Through instrumentalities conceded to him, during the coming year, the Lancaster Seminary and Worcester Museum were endowed, by the munificence of liberal citizens and ardent friends, which Dr. Drake had gathered around him. Also, a suitable site for a “poor-house was purchased, and the establishment planned in a manner that would make it an hospital.” Soon after, he, in conjunction with Drs. Coleman, Rodgers and Black, the latter being Principal of the Lancaster Seminary, commenced medical lectures to a class of twelve students. “These energetic measures excited a strong sensation at Lexington, among his former colleagues, and to prevent the establishment of a rival school at Cincinnati, Dr. Drake was offered the first professorship in Transylvania, if he would remove to Lexington permanently. This he declined; for he already clearly saw the future magnitude and prosperity of Cincinnati, and was unwilling to remove from a rising town to one upon which the shades were already falling.”

Having abandoned all idea of renewing his connection with the School at Lexington, in the winter of 1818-19 he proceeded personally to Columbus to obtain charters for a Medical College and Hospital. His views and plans were adopted by the Legislature, then in Session, and charters for Cincinnati College—to be formed out of the Lancaster Seminary, Medical College of Ohio, and Commercial Hospital—to be connected with the Medical College, were granted. Not was he satisfied with simple charters, but obtained an endowment, sufficient to put them all in successful operation.

In organizing the faculty of the Ohio Medical College, unforeseen difficulties were encountered by the projector. The intrigues of professional rivals delayed the opening of the school until the Winter of 1821-22. According to the law, the faculty was empowered to conduct all the affairs of the Institution. This unlimited power was another intrinsic source of disturbance. The faculty controlled its members ; and opposition to Dr. Drake had so far gained the ascendancy, that after the first course of lectures, he was expelled from the Institution which he had legitimately erected. He was President of the faculty, and conducted the deliberations of the meeting at which he was dismissed. A motion was made and seconded, to expel him from the faculty ; Dr. Drake put the question, it was carried in the affirmative, and he *indignantly* bowed himself out of the meeting. This act is perhaps unprecedented in parliamentary proceedings.

Dr. Drake drafted the charter and organic law for the Medical College, as well as that pertaining to the Hospital. In conferring upon the faculty the power of appointing and removing its members he doubtless designed to give himself personal control of the affairs of the Institution, and decide who should be its professors. This radical movement not only wrought a temporary destruction of the object for which he labored so assiduously, but proved the greatest source of disappointment of his life. With the separation of Dr. Drake from the College, may be dated the first era of this Institution, whose history is written in two words—*reform, mutation*. There was not enough vitality in the Ohio College, as then organized, to survive the shock which the expulsion of Dr. Drake created. The next course of lectures was an *abortion*. After several years of inactivity, the friends of the Ohio Medical College reorganized the faculty, and placed the government upon more liberal grounds, and under the control of trustees.

After lecturing three sessions in Transylvania and one in Jefferson, at Philadelphia, with marked success and satisfaction to his different

classes and colleagues, he returns to the chosen theatre of his early love—establishes the *Western Journal of Medical Sciences*, conducts into successful operation, by the aid of wealthy and philanthropic friends, an Eye Infirmary, and in 1831, organizes a Medical Department to the Miami University. Drs. John Eberle, George McClellan, James M. Staughten, J. F. Henry, J. N. McDowell, Thomas D. Mitchell, and Daniel Drake, composed the members of this new faculty. At that time, most of these men were just commencing their career of usefulness. A great majority found themselves to be men for the times, and have left an imperishable memory ; while others are still building lasting monuments to their names. Could this faculty have been kept together, the highest aspirations of its projector would doubtless have been realized.

“ At this juncture, the faculty and friends of the Medical College of Ohio, judging that the new school would probably destroy the old one, took measures to effect a compromise and union between the two. The result was, that the scheme of the Miami School was abandoned, and Drs. Eberle, Staughten and Mitchell, accepted places in the old school. A professorship was also erected for Dr. Drake, but being evidently a supplement to the ordinary chairs, he resigned at the end of the session of 1831–32, and again returned to private life.”

It was next to impossible for Dr. Drake to abandon the idea of making Cincinnati the “ Medical Emporium of the West.” To accomplish this, his every effort had signally failed. The Ohio Medical College, at this time, “ had few students and less reputation.” During the sixteen years of its existence, 1,019 students had matriculated, many of whom were beneficiaries under the charter. All hopes of reformation in this Institution, appeared to him futile. “ The Legislature had instituted a solemn inquiry into its proceedings—had enlarged the board and elected new trustees—but all in vain ! * * * In the Winter of 1834–5, another petition, numerously signed, was sent up to the Legislature for reform. Among them were Dr. Joshua Martin, of Xenia, Dr. Stule, of Dayton, Dr. Olds, of Circleville, and Drs. Richards, Rives, Judkin, Mount, and numerous other physicians of Cincinnati.” The subject was referred to a committee, who reported that the “ dissensions of the individuals composing the faculty at different times, and the want of scientific reputation in the teachers,” were the origin of the difficulties and want of success. The trustees again attempted reform, and offered Dr. Drake and two of his professional friends, positions in the school ; at the same time,

retaining the remainder of the old faculty, "of whom one or two were those most defective, and against whom most complaint had been made." With these Dr. Drake refused to coöperate, and the scheme of half-and-half again failed."

Under these circumstances, the friends of Dr. Drake determined to revive the Cincinnati College, which was done in 1836, by electing the following gentlemen to fill the various chairs of the Institution, viz.: Drs. J. M. McDowell, Lamb, D. Gross, Landon C. Rives, B. Rodgers, John P. Harrisson, Daniel Drake and Willard Parker, Here we again find Dr. Drake associated with another faculty of men, who, in subsequent years, have, without exception, distinguished themselves in some department of medicine. Some have attained the first position in the American profession. Notwithstanding the comparative success which attended the labors of this organization, at the end of the fourth year of its existence, its friends and founders were doomed to witness its dissolution, and it has never since been reëstablished.

Thwarted again in the cherished purposes of his heart, in building up a great medical school in Cincinnati, from 1840 to 1850, we find him lecturing to large classes of medical students in the Medical Institute at Louisville. The trustees of this school, having limited professorships to those under sixty-five years of age, as he approached this period, Dr. Drake resigned his position, and was immediately elected to fill the chair of Theory and Practice in the Ohio Medical College. "The circumstances which formerly existed as to the professors had changed. The old asperities and controversies had passed away, and with none more entirely and completely than him. He had forgiven, and had resolved to forget whatever had intervened between him and peace with his fellow-man. He therefore accepted the chair offered him, and for one Session lectured for the last time within the walls of the Ohio Medical College."

In his Introductory to this Course, after alluding to his connection with Cincinnati and various Medical Institutions, he said: "My heart still turned to my first love, your alma mater. Her image glowing in the warm radiant tints of early life was ever in my view. Transylvania had been reörganized in 1819, and included in its faculty Professor Dudley, whose surgical fame had already spread throughout the West, and that paragon of labor and perseverance, Professor Caldwell, now a veteran octogenarian. In the year after my separation from this school I was recalled to that; but neither the eloquence of colleagues, nor the greeting of the largest classes

which the University ever enjoyed, could drive that beautiful image from my mind. After four Sessions I resigned, and was subsequently called to Jefferson Medical College, Philadelphia, but the image mingled with my shadow ; and when we reached the summit of the mountain, it bade me stop and gaze upon the silvery cloud which hung over the place where you are now assembled. Afterwards, in the Medical Department of the Cincinnati College, I lectured with men of power to young men thirsting for knowledge, but the image still hovered around me. I was then invited to Louisville, became a member of one of the ablest faculties ever assembled in the West, and saw the halls of the University rapidly filled ; but when I looked upon the faces of four hundred students, behold ! the image was there in their midst. While there, I prosecuted an extensive course of personal inquiry into the cause and cure of the disease of the interior of the Continent ; and in journeyings by night—on the water and on the land—while struggling through the matted rushes where the Mississippi mingles with the Gulf—or camping with the Indians or Canadian boatmen under the pines and birches of Lake Superior—the image was still my faithful companion, and whispered sweet words of encouragement and hope. I bided my time, and after twice doubling the period through, which Jacob awaited for his Rachel, the united voices of the trustees and profession, has recalled me to the chair which I held in the beginning.”

What a graphic description of the *image* which floated through his mind and attended his wanderings through a third of a century “In times of disappointment, he attempted to throw it aside. He had labored in Lexington, Philadelphia, and Louisville, under circumstances which would have allured almost any one, and brilliant prospects which would have tempted almost any ambition. But, from every point of the horizon, wherever drawn, his mind constantly returned to this home of his affections, and his eyes lingered upon the beautiful image which floated through the vision of his fancy.”

This brief and cursory view of the “Memoirs” of Dr. Daniel Drake exhibits his character and labors only as they have been connected with the teaching of medicine, a subject which ever rested near his heart, and warmed into enthusiasm the strongest passions of his ardent nature. In it there is much that is worthy of admiration, and arouses genial sympathies for the departed *savant*. Sustaining a near personal relation to the subject, the author of the book, while he recorded the acts of a truly great man, colors the pictures with the pencil of a partisan. The fact cannot be gainsayed, that Dr.

Drake was designed to *rule* in every enterprise in which he embarked. This is palpable from many circumstances, none of which, however, exhibits it in a stronger light than the proscriptive charters of the "Ohio Medical College" and Commercial Hospital, who trace their parentage to his pen. Endowed with a liberality and munificence unsurpassed by any similar institutions in the country, and surrounded by circumstances and facilities unequalled in the Mississippi Valley for teaching medicine, the organic defects which they inherited, *crippled their youth, impaired the vigor of their manhood, and brought on premature decrepitude*. Like idiosyncracies and transmitted taints, the elementary defects which these institutions received at the hands of their author, has followed them through their entire lives, and will probably terminate their existence. "Reform," like hyper-medication, has been administered until it, in turn, has almost amounted to a disease. Had this College and its Associated Hospital been conducted upon a scale of liberality, commensurate with the demands of the profession, instead of struggling out its existence in opposition to two rival schools in Cincinnati, with an average attendance of from thirty-five to sixty matriculants, it might have been to the West what the foremost institution in this country is to the East.

It is but human nature, after being entrapped in the snare which he designed to wield against others, that whatever of influence—and it was mighty—that Dr. Drake might be capable of wielding against the Ohio Medical College, or the interests of those engaged in its service, would be made to tell in the most diversified and potential manner; and he was true to human instincts. Herein is the nucleus from which sprung the whole difficulties of his life.

In attempting to explain some professional controversies in which he was involved during his early career, Dr. Drake advanced the following theory to account for his difficulties, viz.:—That it was the only profession which had no ultimate tribunal for the settlement of controversies. Clergymen, in all denominations, have some ecclesiastical tribunal; lawyers have their courts; merchants their chamber of commerce; mechanics their professional societies; but doctors had no ultimate tribunals—neither courts, nor assemblies, nor boards of ultimate authority. The consequence is that they continually appeal, in their difficulties, to the public; and this involves at once personalities, recriminations, charges, and misrepresentations, each of which stands upon no other authority than the persons themselves, and each of which is believed or disbelieved by different portions of the community. The result is that medical quarrels are numerous, and occasion no small acerbity and ill-will in society.

But whatever Dr. Drake's imperfections may have been, his labors for the cause of science and humanity are unsurpassed by those of any other one individual of his age. He has more than distanced all his rivals, and erected a monument to his name which is imperishable. For extent of original labor, literary and scientific merit, his great work on the Interior Valley of North America and its diseases is unsurpassed in any language. It is a treatise of which every American may especially be proud. This was the elaborate result of his entire life. Commenced early in his professional career as a notice of his native city and its local affections, it expanded into a history of the Continent. No man was more familiar with the physical condition of this country than Dr. Drake. Every important feature of it had at some time during his life been the subject of his personal scrutiny. The results of his observations he has recorded in a most felicitous manner, for the benefit of the present and future generations.

E. G. C.

Dayton, O.

A Practical Treatise on the Diseases of the Eye. By WILLIAM MACKENZIE, M. D., to which is prefixed an Anatomical Introduction, explanatory of a horizontal section of the human Eyeball. By THOMAS WHARTON, F.R.S., with 175 illustrations from the four revised and enlarged London editions—with notes and additions. By ADDINELL HEWSON, A.M., M.D., one of the Surgeons to Wills' Hospital, &c. Philadelphia: Blanchard & Lea. 1855.

From childhood opposed to heavy books, restricting by their bulk more or less locomotion, and change of attitude required in continued study, we strongly object to the aspect of the large volume before us, horrified by the sameness of position it implies while necessarily laid down when perused. The title contains two good names, William MacKenzie, M.D., and Wharton Jones, F.R.S., with notes and additions of a third, Addinell Hewson, A.M., M.D. The former two require no introduction, familiar as they are to the profession at large, their products taken altogether are the more valuable, as they include carefully made compilations of foreign literature, well representing foreign ophthalmic medicine and surgery. Their books are desirable to the practitioner, necessary to the student, and essential to the ophthalmic surgeon.

The volume of 1027 pages, not being merely an occasionally to be consulted *repertoire*, but a hand-book to be studied, might have been preferable, and more acceptable to the reader, if divided in two parts.

The omission of Dr. Hewson's additional notes, would scarcely have rendered this standard book less valuable, containing as the notes do, besides an imperfect "short account of the ophthalmoscope," compilations of little value, and advertisements of an instrument-maker in Philadelphia. We are somewhat at a loss to account for the publication of a work, of itself practical and instructive, with notes and additions so strongly contrasting in character and value. While Hays* gave his observations, gained in his extensive practice, and coupled with them the experience of other eminent surgeons, thus affirming modifying assertions and practical remarks, or often politely contradicting statements of others, conceived by him to be erroneous on the evidence of such convictions as based on practical ground, and repeatedly furnished in his longstanding practice—Hewson, has no idea of his own. Whether modesty dictated by want of sufficient practice in ophthalmic medicine and surgery, or the assurance of the insignificance of his additions, made him note little, we are not prepared to say; but we must confess the additional notes look to us, like an after-dinner execution of a morning's thought—the idea of editing with additions is a bright one, but carried out with a loaded stomach. Our transatlantic brethren must smile over the introduction by notes, which their standard works need in this country to meet the eyes of the profession. If our American publishers are over anxious to afford us the benefit of foreign literature, why do they not rather encourage translations from foreign languages into English, and make thus accessible to a great portion of the medical community, that which remains unknown to us for such a long period of time. But we understand the books published abroad are mostly property of the publisher, who generally buys the manuscript, while here the *soi disant* editor runs the risk, if unknown, and thus pays for the association of his name with that of authors of fame, instead of achieving this honor by exertions and literary labor. To return to Dr. Addison Hewson, for whom we had to hunt over dozens of pages, till we could find a resting point or brackets, we consider his ambition for editing a tendency in the right direction, but the realization of this tendency would have produced better effect, if his notes with additions came by way

* Lawrence.

of a journal, as a modest contribution suitably connected, the notes and additions not outnumbering twelve pages. We confidently hope that Dr. Hewson will forgive our friendly suggestion for imitating Dr. I. Hays. When equal to him in experience, then his information may be beneficial to the profession, and will be supported and applauded by the press. 

Transactions of the American Medical Association. Vol. 8, 1855.

We desire to record the fact very legibly that this volume is received, it having reached us on the 17th day of November. No time is now afforded for even a bibliographic notice.

PART VI.—EDITORIAL AND MISCELLANEOUS.

SECOND EDITION—FIRE.—Subscribers are informed that the delay this month is caused by the destruction of the whole of our first edition by fire, just as it was ready to deliver, compelling an entire reprint. We shall still hope to be able to distribute the January number early in the month, and meantime suggest to those who owe us, to forward their amounts due ; and to all who are not so, at once to become Subscribers to the MONTHLY.

WHERE IS THE AMERICAN MISS NIGHTINGALE?—The *Observer* gives the following sketch of "Scenes in a Hospital" in this country. Miss Nightingale is wanted here, as well as in Scutari or Sebastopol :—

Having recently visited the largest Hospitals in Europe, and marked the order, quiet, decorum, devotion of nurses and physicians, the perfection of the details for the improvement and comfort of the patients, we were disposed to look into the state of things in an American Hospital, which we were suddenly summoned to, a few days ago. We do not say what Hospital it is. It is doubtless as

well managed as any similar institution in this country. Its buildings are vast, costly, admirably arranged, appointed, and furnished with every necessary apparatus. In point of situation, ventilation, furniture and grounds, it is superior to any we saw in Europe. And here all praise ends.

At the entrance we inquired for the patient whom we desired to see. He had been brought in badly hurt, a few hours before. The answer from the man in the office at the right of the open door, was briefly : "Go up stairs to No. 10, and the doctor will tell you where to find him."

We went up stairs, and after inquiring of one or two in the hall, found the room, where several men were engaged in dressing the wounds of a man. As no one of them looked like *the* doctor, we addressed the inquiry generally to the group. A youth sitting by in an arm-chair, and apparently having nothing to do with the case in hand, who proved to be *the* doctor in question, replied : "In the South building, No. 6, you will find the patient"

"Is he very badly hurt?"

"Yes, there isn't the slightest chance of his getting through."

We left the room, and soon found the labyrinth of halls perfectly unintelligible, and the points of compass equally so. We returned to the room, and the doctor was kind enough to say that he would show us the way.

In a large and well-arranged room, in a row of wounded men, lay the one I was looking for. His injuries had been dressed, but he was very feeble, and I was soon convinced that he would not live. After I had been with him half an hour, he wanted some water. A stool between his cot and the next, contained medicines and drinks for both, a slight partition separating the two. Both patients could readily reach them, and help themselves. Even the brandy, which was to be administered in small quantities, at certain intervals, was there, and the patient could take it at any time, and in his thirst or impatience, or delirium, he might have swallowed everything designed for him and his neighbor. This neighbor cautioned him against touching the medicines, lest he should take something wrong. A coarse Irishman, the nurse, now came along, and I said to him that he wanted a drink of water. "Well he can't have it; he's a taking brandy, and it won't do for him." Of course I submitted, but the kind-hearted neighbor in suffering, said :

"He's faint, and a drop of water will revive him."

The raw Irisher turned upon him and exclaimed, "you shut up your head, will you."

All the while I had been sitting here, a rattling noise from a room, the open door of which led immediately from this, had annoyed me much, and I had felt that it must be harrowing to the distracted nerves of these men, every one of whom was stretched out with broken or amputated limbs. At length I inquired what it was, and was answered, that the attendants were "*playing dominces*." Over a large wooden table they were frequently shuffled, making a startling

and grating noise most painful to the poor fellows, who must endure it for successive hours. The heartless cruelty of this noisy amusement, inflicted by men who are employed and paid to watch with tenderness over their suffering fellow men, excited my indignation, and I freely expressed it on the spot.

There are in this city, and other cities, many females who, for the love of God and man, desire to perform works of mercy, such as the "Sisters of Charity" abound in, and we should be glad to know that a corps of them were ready to take in charge the wards of this Hospital. We will give its name to any person who wishes it for a good object.

What we desire, specially, to exhibit in this statement, is the prevalence of the same spirit that marks American institutions too frequently: an absence of all sense of responsibility on the part of servants and officials: a reckless way of doing things; a want of sober, careful and faithful attention to the duty required, and an utter contempt of all authority. We presume the managers of this Hospital have made regulations, which are violated in the particulars we have pointed out. And we could point out other and *more important deficiencies*, but this would bring a non professional opinion into conflict with the faculty, and would go for nothing. Two hours in this Hospital satisfied us that even in the best regulated establishments, there is a mighty call for reform.

IRENÆUS.

Extract from a private letter, from the *Philadelphia Evening Bulletin*, dated English Hospital, Scutari, Monday, Sept. 17, 1855 :

"Although this is unquestionably the largest hospital in the world, and, in some respects an excellent school for a young physician, yet I am on the whole somewhat disappointed. Every one in authority has, it is true, been kind and attentive, but there are more patients suffering from fever, cholera, and dysentery, than from wounds, so that there is not the opportunity for surgical practice that I had expected.

The most interesting person here, without doubt, is Miss Nightingale, with whom I have had the good fortune to have several interviews. My first visit was for the purpose of presenting to her a gift from a lady in Philadelphia. She was in a great store-room of this mammoth establishment, dispensing good and useful things to numerous applicants. I found her a tall, slender woman, looking younger than her real age, which is about thirty-three, with light hair, blue eyes, and a very pretty mouth. Ordinarily her expression of countenance is almost melancholy, but when she speaks her face lights up and she becomes very animated and attractive. She is the theme of every one's admiration and praise, both in the hospital and in camp, and every soldier has given most cheerfully his contribution towards the Nightingale Hospital, which is to be erected near London, to commemorate the noble heroism of this self-sacrificing woman."

These two extracts from newspapers, we cut from the same num-

ber of the *Church Journal*, and they present contrasts too true to be flattering to our national pride. To what hospital Mr. Prime, the writer of the first, alludes, we have not asked, but no one will have any difficulty in guessing who is at all familiar with such institutions. It is to be confessed, however, that the same strictures would apply to all the large hospitals in this city, and in every other large city in the country, with not more than one exception, if even that. Now we do not hesitate to say this ought not to be so. Good nurses should be provided, and they should be chiefly women, acting under the direction of women. They should not, however, be a board of lady managers looking in occasionally and formally, but such women as Miss Nightingale, (if there be such in our country, and we are sure there are,) plunging into the whole business, guiding, directing, overseeing; with woman's wisdom avoiding difficulties, with woman's tenderness soothing the anxieties and wanderings of the fevered spirit, or with woman's hands administering the bitter draught, less bitter from the sympathy with which it is given, or the cool water doubly refreshing from the mode in which it is bestowed. There would then be none of the rudeness of which "Irenæus" speaks, nor the indirect extortion of fees from poor relatives, as we have *known* to be done by nurses (probably in this same institution), that the suffering one might receive the commonest attentions. Every physician knows the important difference which little attentions make in the result either for life or death to the very sick; and we doubt not that the introduction of a corps of *well-trained* female nurses, headed by an intelligent, experienced, and energetic *lady*, into our large hospitals, would lessen very materially their mortality. Physicians point with just pride to the heroism of their professional compeers, but can they show greater examples of it than are afforded by Miss Nightingale at Scutari, or Miss Andrews at Norfolk? Let them then encourage every effort to replace stupid, coarse, and unfeeling "Irislimen," by those who can do something besides play at dominoes.

Of the mode in which, and the persons by whom, this change is to be accomplished, we shall seek another opportunity to speak.

PROSECUTIONS FOR MALPRACTICE.—At Philadelphia, last Spring, Dr. Frank H. Hamilton, of Buffalo, N. Y., in connection with his report on "deformities after fractures," made some remarks upon suits for malpractice, on which subject it is known he is almost classic

authority. Having learned that the reports were somewhat erroneous, we have been at some little pains to obtain a correct statement of them, and the following may be relied on as correct :

Dr. Hamilton said he had a word to say which did not belong to the report. Prosecutions for malpractice have become so frequent that surgeons were alarmed, and not a few were abandoning the profession, or refusing altogether to undertake the treatment of grave surgical accidents, and especially of fractures. So frequent were these occurrences, that members were no longer surprised at such statements. If they had heard the speaker say that lawyers were abandoning the profession from this cause, they would have been startled, but such statements in relation to our profession are familiar, and have ceased to excite surprise.

It is proper for us, then, to interrogate ourselves. Why is it that we are held to an accountability so much more strict than any other professional men, or than any other artizans? Is it because there are jealous and designing men in our own ranks who instigate these suits? No doubt such men may be found, but only as an exception. The fact is that surgeons have sometimes been mulcted in damages simply because the jury believed, from the united character of the medical testimony, that it was a conspiracy, and the more conclusive the testimony, the more certain, with some jurors, is the defendant to suffer.

Is it chargeable to the members of another profession—to the lawyers? There may be some men in the profession of law, also, who, driven by the sheer necessity of their circumstances—by their extreme poverty, or who, without any such apology, with only loose notions of right and wrong, encourage and undertake such suits—such are the men who hang about the tombs in New York, and who may be found, more or less in every town—but the speaker has reason to believe that honorable and intelligent lawyers seldom countenance these prosecutions. That eminent jurist of the State of New York, Joshua Spencer, has told Dr. Hamilton, for himself he does not think he ever commenced a suit of this character, although he has been frequently retained as counsel, and he believes his brethren, generally, look upon these complaints with suspicion and refuse to meddle with them.

Where, then, must we look for an answer to the question, Why are these prosecutions against surgeons so frequent? Let the gentlemen be assured, the causes are to be found in the *very imperfections of our art, and in our own unwillingness to admit these imperfections*. Surgeons have claimed too much, and it cannot certainly be expected that the world will demand of them less than they claim for themselves. Again and again surgeons have said that a fracture of the femur might be *generally* made to unite without any shortening, while the fact is not so. Malgaigne, who is eminently an honest man, says, to make this bone unite in an adult person, *where the fracture is sufficiently oblique to prevent the ends from supporting each other*, is “simply impossible,” (*simplement impossible*.)

Let the profession be wiser in future and acknowledge that they cannot perform impossibilities.

